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MEDICINE AND HEALTH
Brain Ischemia: Alzheimer’s Disease Mechanisms

Ryszard Pluta, M.D., Ph.D. (Professor, Head of Laboratory of Ischemic and Neurodegenerative Brain Research, Mossakowski Medical Research Centre, Polish Academy of Sciences, Warsaw, Poland)

In series: Neuroscience Research Progress


This new book presents a summary of Alzheimer’s disease-related ischemic protein changes and gene expression as risk factors for the late-onset of sporadic Alzheimer’s disease, and their role in Alzheimer’s disease ischemic etiology. Ischemic brain changes were noted in the staining of different parts of an amyloid protein precursor, presenilin 1 and 2, tau protein, alfa-synuclein, and apolipoproteins A1, E and J. Current advances in understanding the ischemic etiology of Alzheimer’s disease has revealed dysregulation of Alzheimer’s disease-associated genes including presenilin 1 and 2, β-secretase, amyloid protein precursor, apoptosis, autophagy, mitophagy, and tau proteins. This book presents the relationship between these genes, dysregulated by cerebral ischemia, and the cellular and tissue neuropathology characteristic of Alzheimer’s disease. This book draws attention to the latest research confirming the theory that Alzheimer’s disease-related proteins and genes play an important role in ischemic brain damage, and ischemia is an essential and leading supplier for the onset and progression of sporadic Alzheimer’s disease. The above data comes from the latest research from leading and renowned scientists around the world, who present important information on the understanding of the ischemic etiology of Alzheimer’s disease. In the future, it is likely that the manipulation of ischemia and ischemia-activated Alzheimer’s disease-associated genes and their proteins will give new hope for the development of causal therapies urgently needed to prevent or treat neurodegenerative diseases such as Alzheimer’s disease. An innovative/modern approach to the etiology of Alzheimer’s disease in the chapter XII “Ischemic etiology of Alzheimer’s disease” will give the reader a glimpse of what is on the horizon.

Cardiovascular System

Clopidogrel and the Newer P2Y12 Antiplatelet Agents: Pharmacology, Clinical Uses, and Adverse Effects

Michael P. Savage, M.D. (Thomas Jefferson University Hospital, Philadelphia, PA, US), David L. Fischman, M.D. (Thomas Jefferson University Hospital, Philadelphia, PA, US), and Mamas A. Mamas (Institute for Primary Care and Health Sciences, Keele University, UK)

In series: Cardiology Research and Clinical Developments


Cardiovascular disease remains the leading cause of death in the developed world. By preventing thromboembolic events such as heart attacks and strokes, antiplatelet drugs have become a cornerstone in the treatment of cardiovascular disease. Clopidogrel is a member of the thienopyridine family which inhibit ADP-induced platelet activation by irreversibly binding to the P2Y12 receptor. Clopidogrel is one of the most commonly used medications with over 9 million prescriptions written annually. It is utilized in the treatment of a wide variety of cardiovascular disorders including acute coronary syndromes (ACS), percutaneous coronary intervention (PCI) with stents, cerebrovascular disease, peripheral vascular disease, and structural heart interventions. Most often, clopidogrel is used in combination with low dose aspirin, providing dual antiplatelet therapy (DAPT). Newer, more potent P2Y12 inhibitors, prasugrel and ticagrelor, are now available as alternatives to clopidogrel. These newer agents have been shown to be more effective than clopidogrel in reducing ischemic events in patients with ACS. Recently a novel intravenous P2Y12 inhibitor, cangrelor, has become available for use during PCI in patients who have not been pretreated with an oral P2Y12 inhibitor. This book examines
virtually all aspects of P2Y12 inhibitors – pharmacology, clinical uses, randomized trial results, guideline recommendations, and adverse drug effects. Important fundamental issues are reviewed including comparative pharmacology of P2Y12 inhibitors, randomized trials of clopidogrel in patients with coronary artery disease, DAPT duration after PCI, and role of platelet function testing. The newer P2Y12 inhibitors (prasugrel, ticagrelor, and cangrelor) receive special focus. Use of antiplatelet therapy in specific patient populations is discussed including patients with coronary bypass graft surgery, peripheral vascular disease, cerebrovascular disease, and structural heart disease. Management of antiplatelet therapy in patients who require anticoagulation is a particularly challenging clinical setting and is the topic of a featured review. Finally, adverse drug effects and reactions are examined in a section highlighting clopidogrel resistance, clopidogrel hypersensitivity, and bleeding complications. This book is designed to provide a comprehensive review of clopidogrel and the newer P2Y12 inhibitors. Towards that end, the authors have enlisted an internationally renowned group of experts as contributors. It is intended to be a resource for clinicians, scientists, pharmacologists, and all healthcare professionals involved in the management of cardiovascular disease.

Concepts, Mathematical Modelling and Applications in Heart Failure
Massimo Capoccia, M.D., MSc Eng (Manchester Heart Centre, Manchester University NHS Foundation Trust, Manchester, UK and Department of Biomedical Engineering, University of Strathclyde, Glasgow, UK) and Claudio De Lazzari, MSc Eng (National Research Council, Institute of Clinical Physiology, Rome, Italy and National Institute for Cardiovascular Research (I.N.R.C.), Bologna, Italy)

In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-53614-771-1. $230.00.

Although there are probably enough publications about mechanical circulatory support, they do not seem to address the theoretical aspects with sufficient details. A more detailed knowledge of the interaction between ventricular assist devices (VADs) and the cardiovascular system may help with their clinical management with a view to improve patients’ outcomes. The aim is a different approach based on the development of critical thinking that may generate further ideas in the context of current developments. We must understand the time-varying elastance theory, which has played a key role in cardiovascular modelling and is often used for numerical/hybrid simulations of a mechanically supported left ventricle. The limitations of the original concept have led to further modifications of the theory and alternative approaches worth exploring. Ventricular interactions have significant implications in cardiac mechanics and it is extremely important to understand their role during VAD support. We must understand the physiology of VAD support and their connection to the circulation. Aortic valve physiology during support with rotary blood pumps has important implications on device performance. The modelling approach to pneumatic pulsatile VADs and their current role is addressed. The principles behind magnetic levitation technology are explained in details in view of its contribution to the progress in this field. Trans-cutaneous external transmission energy system technology has great potential, but the physics behind it does not get explained enough. The potential of a simulation approach in the clinical environment is discussed in relation to optimization of device treatment, outcome prediction and training of medical and nursing staff. These are some of the key concepts being addressed in this book which biomedical engineers, clinicians and academics should hopefully find educational and helpful according to their needs. VADs have become the standard of care for patients in advanced heart failure, but we must understand their strengths and limitations in order to make further progress and achieve their full potential.

Horizons in World Cardiovascular Research. Volume 16
Eleanor H. Bennington

In series: Horizons in World Cardiovascular Research
Hardcover: 978-1-53615-606-5. $250.00.

The opening chapter of Horizons in World Cardiovascular Research. Volume 16 discusses the functions of the internal jugular veins, particularly how they are usually valveless except for a single valve situated just above the junction of the vein with the brachiocephalic vein. Additionally, the authors assess the frequency, nature, duration and significance of cardiovascular disorders associated with rotavirus infection in the human body. A careful analysis of electrocardiograms and other diagnostic tools is included with the goal of helping to early identify high risk beta-thalassemia major patients for arrhythmias and sudden cardiac death. The authors also examine the coronary vasospasm as a potential risk for thrombus formation in patients with drug-eluting stents implantation by showing several clinical studies and case reports in terms of mechanism and prevention. Following this, an overview of the structure of smooth muscle cells and their main functions in the human umbilical artery is presented. The anatomy and physiology of venous outflow from the brain is described. Since
physiological effects play an important role in regulating this outflow, it is important to present some basic physical principles governing the flow in the tubes. Moreover, the authors review a transgenic mouse model to study its genetic contribution to Moyamoya syndrome, a cerebrovascular condition defined by the chronic progressive stenosis of the intracranial internal carotid arteries and their major branches, as well as describe a recently-developed surgical model. The closing chapter posit that it would be beneficial to describe the difficulties and challenges that occur during the implantation of permanent biventricular defibrillating systems in cases of Superior Vena Cava is Persistent Left Superior Vena Cava.

**Horizons in World Cardiovascular Research. Volume 17**

*Eleanor H. Bennington*

In series: *Horizons in World Cardiovascular Research*

2019.

Hardcover: 978-1-53616-157-1. $250.00.

Atrial fibrillation is initiated by triggers in combination with underlying atrial substrate. Horizons in World Cardiovascular Research. Volume 17 discusses how innovations in cardiac magnetic resonance imaging techniques, especially late gadolinium enhancement imaging, have advanced our ability to better understand and accurately identify fibrosis in the atrial myocardium of atrial fibrillation patients. According to the nephron number hypothesis, individuals born with kidneys with fewer nephrons would be at increased risk for hypertension and renal disease later in life. Evidence supporting a role for preterm birth itself as a programming risk factor come from observations demonstrating that the degree of prematurity impacts the severity of hypertension or renal dysfunction observed later in life, indicating a dose-response effect of preterm birth. As such, the authors review this effect in the context of consequences for the mother after pregnancy as well as individuals born during premature labor. This compilation goes on to discuss venous thromboembolism, a spectrum of disease that includes both deep venous thrombosis and pulmonary embolism. Venous thromboembolism affects 950,000 patients every year and is associated with significant morbidity and mortality. Superior mesenteric artery syndrome is a rare clinical entity resulting in partial or complete duodenal obstruction due to compression of the third part of the duodenum. Symptoms will vary depending on the severity, but can be very debilitating. The authors discuss the diagnosis of this rare condition, as well as treatment options. Next, the surgical anatomy of the superior mesenteric artery is schematized through a subdivision in three segments, each with a different method for surgical dissection, for a better understanding of its surgical anatomy. The final chapter focuses on the current development of zebrafish models for the screening for cardiotoxic and cardioprotective agents. The administration of endocrine disruptors, cigarette smoke, acrylamide, phthalates and phosphate, heavy metals, inoculation infectious agent, alcohol, surgery and laser light radiations are the major cause of cardiotoxicity in zebrafish.

**The Rediscovered Tricuspid Valve: Structure, Function and Clinical Significance in Health and Disease**

*Giacomo Bianchi, M.D., Ph.D. (Ospedale del Cuore – Fondazione "G. Monasterio", via Aurelia Sud, Massa, Italy)*

In series: *Cardiology Research and Clinical Developments*

2019.

Hardcover: 978-1-53616-098-7. $195.00.

Tricuspid valve disease has long been ignored as a surrogate for the left atrioventricular valve (the mitral valve) and mainly a benign, indolent disease. This concept is currently outdated, as we know that the pathology of the tricuspid valve, primitive or secondary, sometimes isolated, brings with it a poor prognosis if not treated. To date, the complexity is recognized not only of the valve itself, but also of its pathophysiology and the environment of the right heart and its interaction with the left heart. In order to better define the therapeutic path of a patient suffering from tricuspid valve disease, we have tried to offer a comprehensive overview to the reader, starting from historical considerations (Chapter 1) about the vision of the circulatory system and from the evidence accumulated over the centuries until the recognition of the continuum between signs and symptoms related to the valve. As the basis of a modern approach to the understanding of the valve itself, we have traced the embryological and morphogenetic stages towards the anatomo-clinical correlates (Chapter 2). Subsequently, the epidemiology and clinical approach to tricuspid valve disease (Chapter 3) were illustrated, followed by the diagnostic procedure, state-of-the-art imaging techniques (Chapter 4) and more advanced techniques (Chapter 5). In particular, I thought it was necessary to dedicate a chapter to the pathology of the tricuspid valve secondary (functional) to left heart disease (Chapter 6), probably the most frequent form encountered by the clinicians. We have not neglected to discuss about tricuspid valve infections (Chapter 7), with particular reference to the microbiology, diagnosis and treatment. We considered it necessary that the role of the valve in congenital adult disease should also be addressed (Chapter 8), whether in natural history, modified by surgery or as an acquired disease. Neoplastic pathology may also involve the valve and the pathologist provides (Chapter 9) the knowledge and systematization of the most frequent primary and secondary tumors. Coming to the therapeutic act, after dealing with special pathology of the valve, (Chapter 10) we present the pharmacological approach, a necessary act, sometimes as a sole therapeutic option and sometimes propedectic to surgery. Tricuspid valve plays an absolutely primary role in two aspects of the advanced treatment of refractory heart failure, namely its clinical and prognostic impact on ventricular care systems (LVAD) and cardiac transplantation (Chapter 11) has been discussed. The last two chapters are dedicated to non-medical treatment, with a particular focus on indications, risk...
selection and stratification as well as adequate surgical techniques (Chapter 12) and new perspectives of intervention through transcatheter techniques (Chapter 13). Overall, there is a need for an integrated and multidisciplinary approach to a complex nosological entity that is itself interdependent on pathophysiological systems, which the clinician, cardiologist, cardiac surgeon, internist and researcher cannot ignore.

**DENTISTRY**

**Bioactive Materials in Dentistry: Remineralization and Biominerallization**

Francine Benetti, Ph.D. (Department of Restorative Dentistry, São Paulo State University (Unesp), School of Dentistry, Araçatuba, São Paulo, Brazil)

In series: Dentistry and Oral Sciences


Bioactive materials, or biomaterials, have the ability to interact biologically with the tissue to which it is inserted, and to stimulate the deposition of mineralized tissue. The calcium phosphate-based ceramics were the first known materials in dentistry to have bioactivity, and currently, these materials are the most used for biomedical purposes, with different morphological characteristics. In dentistry, these materials have achieved immense importance by stimulating the deposition of osseous tissue in injured bone, and by having the ability to remineralize hard tooth tissues (enamel and dentin). Furthermore, repair materials based on aggregated trioxides mineral or on calcium hydroxide are classic biomaterials and widely used in dentistry, mainly in contact with the pulp tissue or periodontal ligament, for repair processes. However, various formulations of these materials appear all the time, in search of the ideal material. In general, bioactive materials have been shown to promote the release of calcium, sodium, silicon and phosphate ions, which are metabolized by the body, having effects such as angiogenesis and antimicrobial action, which can be improved depending on the composition of the material. Pulp tissue is a highly specialized dental tissue and is the subject of intense studies about the response to biomaterials. It is also understood that some systemic alterations in individuals have an influence on the action of bioactive materials during tissue repair processes. Thus, this book will address the use of different bioactive materials in dentistry, considering the performance of these biomaterials in the hard tissues of the tooth, and the response of the dental pulp, as well as the influence of the composition of these materials and of the individual’s systemic alterations in bioactivity and in antimicrobial activity. The several in vivo and in vitro tests to evaluate the bioactivity of a biomaterial will also be addressed.

**Dental Considerations for Medication-Related Osteonecrosis of the Jaw (MRONJ)**

Hani H. Mawardi (King Abdulaziz University, Faculty of Dentistry, Jeddah, Saudi Arabia)

In series: Dentistry and Oral Sciences


Softcover: 978-1-53613-755-2. $95.00.

e-book: 978-1-53615-151-0. $95.00.

Dental Considerations for Medication-Related Osteonecrosis of the Jaw (MRONJ), First Edition provides a comprehensive review on MRONJ epidemiology, pathogenesis, clinical features, and diagnosis. In addition, it discusses detailed, up-to-date management protocols for patients with this fairly new condition. Considering the rapid increase in MRONJ prevalence, this book provides key information for dental practitioners and detailed dental considerations for almost every dental specialty to be applied upon an encounter with patients at risk or with MRONJ. It also provides guidelines for safe dental procedures to be delivered to MRONJ patients, and potential risks associated with more invasive procedures. In addition, it includes practical tips and procedures for application in both hospital and ambulatory settings. This book contains over 30 illustrations and images with 15 tables of clinical relevance as a handy reference and simplified application for daily practice. Dental practitioners engaged in the care of MRONJ patients are faced with questions on this condition’s nature, treatment, and long-term prognosis on a regular basis. Therefore, this book contains a dedicated section for common Q&A in a simplified language to be shared with MRONJ patients and their families. Dental Considerations for Medication-Related Osteonecrosis of the Jaw (MRONJ), First Edition is considered one of few references on MRONJ, and a must-have resource for every dental student, resident, and dental provider to ensure standards of care for all dental services provided to this category of patients.
Molluscum Contagiosum: Epidemiology, Pathogenesis, Clinical Manifestations, Dermoscopy, Ultrastructure and Evidence Based Treatment
Yuping Ran, MD, PhD (Prof. Dermatology, West China Hospital, Sichuan University, Board Member of Chinese Society of Dermatology, Chair of Mycology Group of Chinese Society of Dermatology, Chengdu, China)

In series: Dermatology - Laboratory and Clinical Research
2020.
Softcover: 978-1-53616-436-7, $82.00.
e-book: 978-1-53616-437-4, $82.00.

Molluscum contagiosum is a common but always unvalued poxvirus infection of skin disease. The clinical, pathogenic, epidemiological and therapeutic aspects have not been widely and thoroughly understood. This book analyzes a wide variety of pathogenesis, epidemiology, and clinical manifestations of molluscum contagiosum virus in detail. The development process of molluscum contagiosum virus observed in transmission electron microscopy has also been described and discussed. It would help the clinician understand the pathogen’s ultrastructure and the change of different images in the process. Evidence-based treatment methods play a significant role in evidence-based practice for molluscum contagiosum virus. Interventions include topical agents, physical interventions and lasers for molluscum contagiosum virus. Each chapter is focused on enhancing the clinician’s knowledge on molluscum contagiosum virus based on review and research, provided by the good sets of references to introduce updated information on each topic. One of the greatest highlights of the book is the addition of a large number of dermoscopic images of molluscum contagiosum lesion, including typical and atypical, under polarized and non-polarized light characteristics, as well as the special localization, including eyelids, ears etc. In addition, its different developing stages greatly enriches the clinical understanding of molluscum contagiosum skin lesions. This book helps clinicians understand the distribution, transmission routes, replication to the human epidermis and characterization of molluscum contagiosum more precisely. It also focuses on the challenges of treatment strategies for molluscum contagiosum virus. This book comprises a wide spectrum of topics related to the molluscum contagiosum virus. Each chapter challenges readers by providing insights into the pathogenesis, epidemiology, clinical manifestations, development process undergoing transmission electron microscopy and evidence-
based treatment methods of molluscum contagiosum virus. The different chapters related to molluscum contagiosum virus provides the latest information to clinicians and readers on its clinical manifestations and treatment modalities.

**ENDOCRINOLOGY**

**Diabetes**

**Diabetic Foot: Prevention and Treatment**

*Gianni Romano*


Softcover: 978-1-53616-266-0. $95.00.


Diabetic Foot: Prevention and Treatment first proposes a noninvasive screening method for diabetes based on the thermoregulation of the peroneal vessel. Since diabetes affects the peroneal vessel of the patients significantly, the thermoregulatory behavior of peroneal vessel is studied for induced hot and cold stress in this work. Next, the authors highlight recent findings in the area of human mesenchymal stem cells sources, their differentiation ability, immunogenicity, adaptation to the microenvironment, as well as use in human clinical trials. The authors also propose that, given the increasing prevalence of antibiotic resistant pathogens and the failure of antibiotic-exclusive therapeutics in the treatment of diabetic foot infections, combinations of antimicrobial peptides and antibiotics may be a potential treatment alternative. Advanced diabetic foot ulcer therapies are explored based on current research. Recent studies show that diabetic patients have a 25% risk of developing diabetic foot ulcers in their lifetime. Lastly, a study was carried out to investigate the effects of social support on the reduction of wound size after four weeks of treatment with standard care in patients with Grade B, Stage I diabetic foot ulcer.

**Metabolic Disorders**

**Mitochondrial Respiratory Chain Disorders: From Clinical Presentation to Diagnosis and Treatment**

*Iain P. Hargreaves (Principal Clinical Scientist, National Hospital)*


Softcover: 978-1-53615-053-7. $95.00.

E-book: 978-1-53615-054-4. $95.00.

Mitochondrial respiratory (MRC) disorders are a phenotypically and genetically diverse group of diseases which have an estimated incidence of 1 in 5000, and can manifest at any age with virtually any symptom. These disorders are generally progressive and multi-systemic, typically affecting organs with high energy demands, although potentially any organ can be affected. In view of their wide spectrum of clinical symptoms, together with their complex genetics, the diagnosis of these disorders presents a real challenge and usually requires a multidisciplinary approach involving clinical, genetic, histological, and biochemical investigations. In addition, an MRC defect may also occur as a secondary consequence of disease pathophysiology, as well as drug toxicity, further complicating the diagnostic algorithm for these disorders. The accurate diagnosis of MRC disorders is also hindered by the lack of reliable and validated biomarkers or surrogates for evaluating evidence of MRC dysfunction. Treatment options for MRC disorders are quite limited with no actual cure as yet in sight. Currently, apart from supportive therapies to manage the various clinical presentations of these diseases, patients can receive a host of antioxidants, vitamins, and cofactors in an attempt to maximize residual MRC function, and to combat the oxidative stress associated with these diseases. However, at present there appears to be a distinct lack of consensus on the appropriate treatment regime to instigate in patients with these disorders. Although, it is hoped that the establishment of national and international cohorts of patients with MRC disorders will allow the development of a unified approach to the development of candidate strategies for the treatment of these patients. In recent years, pharmacotherapies aimed at enhancing mitochondrial biogenesis have received a lot of attention, with some of them now being used in phase II clinical trials to assess evidence of their therapeutic efficacy in patients. The purpose of this book is to outline the clinical presentation and the genetic and non-genetic causes of MRC disorders, as well as highlighting evidence of secondary mitochondrial dysfunction in disease. In addition, the current biochemical methods used in the diagnosis of MRC dysfunction will be
discussed together with the potential future developments in this field. The current treatment options available to patients with MRC disorders will also be discussed together with novel, biochemical, therapeutic strategies which have yet to reach clinical application.

**Regucalcin: Metabolic Regulation and Disease**

*Masayoshi Yamaguchi, PhD (Department of Hematology and Medical Oncology, Emory University, School of Medicine, Atlanta, Georgia, US)*

In series: *Endocrinology Research and Clinical Developments*

2019.

Softcover: 978-1-53616-172-4, $95.00.


This book, which is entitled “Regucalcin: Metabolic Regulation and Disease”, introduces the recent topics regarding the involvement of regucalcin in metabolic regulation and its related diseases. Cell signaling system may be potent interest in the fields of biomedical research. Regucalcin, which was discovered as a calcium-binding protein in 1978, is demonstrated to play a potential role as a suppressor in manifold intracellular signaling process linked to transcription activity. With growing studies, regucalcin has been demonstrated to play a multifunctional role in the regulation of the function of various types of cells and tissues, including the regulation of intracellular calcium homeostasis, various enzymes activity, cell signal transduction, nuclear function and gene expression, cell proliferation, apoptosis, and other cellular events. Regucalcin plays a pivotal role in maintaining cell homeostasis and protecting from disorders with ageing. This book focuses recent highlighted information regarding the role of regucalcin in metabolic regulation and its related diseases with ageing. This book is constituted of 6 chapters as described in the following. This book will be of interest to graduate students, researchers, scientists and physicians focused on the fields of molecular and cellular biology, biomedical sciences, and clinical challenges.
Candida Albicans: Symptoms, Diagnosis and Treatment
Nayira S. S (Associate Professor, Majmaah University, Saudi Arabia)
In series: Immunology and Immune System Disorders
Softcover: 978-1-53615-560-0. $82.00.
e-book: 978-1-53615-561-7. $82.00.
Candida albicans is an opportunistic pathogenic yeast and it is a common member of the human gut flora. It does not proliferate outside the human body. It is resident in the gastrointestinal tract and mouth in 40–60% of healthy adults. It is usually a commensal organism but can become pathogenic in immunocompromised individuals under a variety of conditions. Yeast infection is caused by a specific strain of yeast known as Candida. Although a small amount of yeast is found in the body, yeast infection occurs when there is an overgrowth of Candida. Most yeast infections is caused by Candida albicans. Fungal that affects different areas of the body like skin, mouth, genitals, throat and blood. The yeast Candida albicans lives inside every one of us. Normally it presents no problems, but today’s widespread use of broad-spectrum antibiotics, antacids, contraceptive pills, and steroids, as well as the all-too-common sugar-rich diet, can lead to a proliferation of this parasitic yeast within the body. Often overlooked by doctors, overgrowth of Candida has been linked to a wide variety of physical and mental problems such as: • acne • heartburn • muscular pain • anxiety • irritable bowel syndrome (IBS) • fibromyalgia • bloating and constipation • chronic fatigue • migraine • cystitis • irritable bowel syndrome (IBS) • allergies • menstrual problems • irritability Candida that causes the human infection candidiasis results from an overgrowth of the fungus is for example often observed in HIV-infected patients. C. albicans is the most common fungal species isolated from biofilms either formed on (permanent) implanted medical devices or on human tissue. C. albicans, C. tropicalis, C. parapsilosis, and C. glabrata are together responsible for 50–90% of all cases of candidiasis in humans. A mortality rate of 40% has been reported for patients with systemic candidiasis due to C. albicans. Invasive candidiasis contracted in a hospital causes 2,800 to 11,200 deaths yearly in the U.S. C. albicans is commonly used as a model organism for biology. It is also known as sweet fungus and sugar inhibits its growth. It is generally referred to as a dimorphic fungus because it grows both as yeast and filamentous cells. However, it has several different morphological phenotypes. C. albicans was for a long time considered an obligate diploid organism without a haploid stage. This is, however, not the case. Next to a haploid stage C. albicans can also exist in a tetraploid stage. The latter is formed when diploid C. albicans cells mate when they are in the opaque form. Candida thrives well on sugar and needs an acidic environment to survive. Processed and refined foods high in gluten and sugar (including natural sugars) create an ideal home for Candida, so the most logical place to start battling the enemy is by restricting intake of alcohol, sweets, bread, vinegar and foods containing vinegar, peanuts and foods high in sugar — including sweet fruits such as bananas and dates. Include protein rich foods like avocados, chia seeds and wild-caught fish. Garlic and turmeric (also known as curcumin) is a natural anti-fungal that can kill Candida. The best potent and all-natural candida killer is coconut oil. It contains caprylic acid, which has anti-microbial properties that can kill yeasts and candida. Studies have shown that it is more effective in treating candidiasis than the prescription drug fluconazole. There are relatively few drugs that can successfully treat Candidiasis. Treatment commonly includes amphotericin B, echinocandin, or fluconazole for systemic infections. Nystatin for oral and esophageal infection and Clotrimazole for skin and genital yeast infections.

Diverticular Disease: Colonic Epidemic of the 21st Century
Andrés García-Marín, MD, PhD (Department of Surgery, Hospital Universitario San Juan de Alicante, Alicante-Spain; Professor of Surgery, Department of Pathology and Surgery, University Miguel Hernández, Elche, Alicante, Spain), and Jaime Ruiz-Tovar, MD, PhD (Department of Bariatric Surgery, Centro de Excelencia para el Diagnostico y Tratamiento de la Obesidad Valladolid-Spain, Professor of Surgery, Universidad Alfonso X, Madrid, Spain; Department of Surgery, Universidad Autónoma de Madrid, Spain; Obesity Unit, Garcilaso Clinic, Madrid, Spain; Department of Surgery. Centro de Excelencia para el Estudio y Tratamiento de la Obesidad, Valladolid, Spain; Department of Surgery, University Hospital Rey Juan Carlos, Mostoles, Madrid, Spain)
In series: Digestive Diseases - Research and Clinical Developments
Softcover: 978-1-53615-989-9. $82.00.
e-book: 978-1-53615-990-5. $82.00.
Diverticular disease is one of the most common problems encountered by gastroenterologists, emergency physicians and surgeons, with a higher prevalence in elderly patients and a dramatic rising of incidences in young people, which involve an increase in health care costs, according to ambulatory visits and hospital admissions. Acute diverticulitis, the most important complication of diverticular disease, has a broad spectrum of severity, which involves many treatment options, ranging from outpatient-based antibiotic treatment, or even isolated nonsteroidal anti-inflammatory drugs, to parenteral antibiotic regimen, percutaneous drainage or surgery (lavage and drainage, Hartmann procedure or resection with anastomosis with or without a diverting stoma). The American Society of Colon and Rectal Surgeons recommended in their guidelines a routine follow-up colonoscopy after recovery from an acute episode to rule out malignancy, which is being re-evaluated in recent studies, including the alternative CT-colonography, especially in cases of incomplete colonoscopy or in high-risk patients. After an episode of acute diverticulitis, there is a significant risk of recurrence and a negative impact on quality of life. In order to decrease it, there are many treatments that are being evaluated such as fiber-rich diet, mesalazine, rifaximin, probiotics and elective colon resection, which should be decided individually. The aim of this book is to revise the current evidence about the diverticular disease and acute diverticulitis.

GENETICS

A Closer Look at Polyadenylation
Anatolios Georg Buckley
In series: Biochemistry Research Trends
Softcover: 978-1-53615-355-2. $95.00.
In response to various environmental cues and cellular stress, cells need to modify their protein expression pattern for proper cell functioning. The cell experiences diverse cellular stress as oxidative, genotoxic, and etc. The damage of the genome by certain chemicals or agents affects the cell integrity and leads to genotoxic stress. As such, this compilation discusses how different cellular stresses affect the polyadenylation process and modulate the polyadenylation machinery. Cytoplasmic polyadenylation plays an important role in oocyte maturation, mitotic cell cycle progression, cellular senescence and synaptic plasticity. Poly(A) tails can be elongated post-transcriptionally by noncanonical poly(A) polymerases, which can impact cells with limited transcriptional activity. A recent study is discussed wherein it is shown that that alternative cleavage and polyadenylation isof orm expression influences about 10% of targeting by miRNAs between any two cell types analysed and, more importantly, that the accuracy of target prediction can be improved if the cellular alternative cleavage and polyadenylation profile is considered. The authors go on to focus on how altering the polyadenylation process and components of RNA polyadenylation machinery leads to abnormal physiological conditions. The targeting of elements of RNA polyadenylation machinery as therapeutics in clinical research is also discussed. The majority of eukaryotic mRNAs are polyadenylated at their 3´ end. This poly(A) tail is not encoded by DNA and is added co-transcriptionally. Cleavage and polyadenylation specific factor (CPSF1) is part of multiple subunit factors required for a site-specific cleavage, which is involved in determining specificity and efficiency of the 3´ end processing of pre-mRNAs in the nucleus by recognizing the polyadenylation signal. Following this, mutations in the poly(A) signal (AAUAAA hexamer) present in the globin pre-mRNA were identified in hematological disorders caused by defects in the synthesis of one or more of the globin chains (thalassemia). The point mutation AATAAA to AACAAA of a human β-globin gene detected in 1985 in DNA from a patient with β-thalassemia led to the formation of an elongated β-globin mRNA isoform. This compilation addresses how RNA processing at the pre-mRNA level occurs in the cell nucleus and regulates gene expression. Newly synthesized mRNA contains a poly(A) tail, which is added through canonical polyadenylation coupled to transcription. Canonical mRNA 3´ processing involves endonucleolytic cleavage within the pre-mRNA sequences and the addition of a poly(A) tail to the upstream cleavage fragment. The closing chapter discusses how the poly(A) tail at the 3´ end of the majority of eukaryotic messenger RNAs (mRNAs), with the exception of histone transcripts, is not simply a static entity but more likely a dynamic matter. Its length added to an mRNA is regulated by the concerted action of poly(A) polymerases and deadenylases.
**Stem Cells**

**Manipulation of Stem Cells for Disease Benefits**

*Prasad Koka (Chief Scientific Director and Professor of DiponEd Institute of Regenerative Medicine Merisis Therapeutics – DiponEd BioIntelligence, Bangalore, India)*

In series: *Stem Cells - Laboratory and Clinical Research*


Hardcover: 978-1-53615-468-9, $230.00.

This collection of articles deals with the benefits of different types of stem cells sources, use, manipulation, and aspects for the treatment of chronic diseases. Topics include the role of calcium channel pathway/s in the regulation of neural stem cell differentiation; the evolutionary roles of the totipotent, pluripotent, or even multipotent stem cells; the derivations of multipotent MSCs; and potential canine-derived stem cell therapies for dogs. The scope of the book also provokes further studies into other topics, such as MSC differentiation into hepatocytes and the involvement of these cells with microRNA-133 in type 1 diabetes; the role of Vitronectin in the differentiation into endoderm; the extent to which the stemness of dental pulp stem cells might be useful; PBMCs as a source for pluripotent stem cells; yoga in possible synergy with the finding that bone marrow stromal cells provide relief from a laboratory reagent used as drug-mediated pain in spinal cord injury.

**Stem Cells Origins of Cytokine Interactions**

*Prasad S. Koka (Chief Scientific Director and Professor of DiponEd Institute of Regenerative Medicine Merisis Therapeutics – DiponEd BioIntelligence, Bangalore, India)*

In series: *Stem Cells - Laboratory and Clinical Research*


Hardcover: 978-1-53615-302-6, $230.00.

CD34+ pluripotent hematopoietic stem cells (HSCs) are generally involved in all aspects of the human system as well as in the stem cell therapeutic strategies, as in bone marrow transplantation (BMT). This book deals with several original research articles on HSC proliferation and containment. Lineage directed differentiation of HSCs and use of easily available herbal extracts for greatly increased proliferation into erythrocytes to treat thrombocytopenia are herein reported. HSCs respond to the growth factors and the herbal medicine is a welcome substitute with lack of known side effects for treatment purposes. However molecular mechanisms as in signal transduction are more easily deciphered than those derived from the herbs which may well be taken up for future studies. Mutations in the signal transduction genes such as JAK-2 have been shown to cause dysregulation of the CD34+ cell differentiation causing erythrocytosis, which is the reverse of thrombocytopenia, both of which are undesirable clinical consequences! Erythrocytes have been shown to date back to ancient tissues from the fossils.

**Geriatrics**

**Function and Metabolism of Aging: Longitudinal Neuroimaging Evaluations**

*Yongxia Zhou, Ph.D. (Imaging Scientist, Columbia University and New York University, New York, NY, USA and University of Pennsylvania, Philadelphia, PA and University of Southern California, CA, USA)*

In series: *Geriatrics, Gerontology and Elderly Issues*

In series: *Neuroscience Research Progress*


Softcover: 978-1-53615-613-3, $95.00.
e-book: 978-1-53615-614-0, $95.00.
Maintaining good metabolic profile plays a significant role in improving the quality of life at aging. Widely recommended physical and psychological strategies include exercise, calorie restriction (such as healthy diet), anti-aging neuroprotective and anti-inflammation therapy. Most occurring risks at middle age range (45-65 years old) are obesity, insulin resistance, inflammation, alteration in the hypothalamus-hypophysis suprarenal axis activity, stress and hypertension that could increase the prevalence of metabolic syndrome. Metabolic syndrome increases with age, particularly for women. Significant associations were seen between imaging measures and cardiovascular risk factors at both baseline and 18-month follow-ups. Both baseline and longitudinal imaging analysis and correlations with neurocognitive tests as well as cardiovascular risk factors could provide distinct and confirmative perspectives relating to the pathophysiology of aging-related diseases such as dementia and diabetes. Significant baseline and longitudinal effects of age, smoking and neuropathological burdens such as amyloid, tau and glucose metabolism provide a complete imaging, neurocognitive and cardiovascular profile for better staging and differentiating different diseases. Together with accurate imaging guidance, early detection and treatment could be achieved with the ultimate goal of improving quality of life at middle age and extending longevity.

The aim of this book is intended to provide both beginners and experts in biomedical imaging and health care a broad picture as well as new development in brain function and metabolism of aging using innovative neuroimaging techniques and advanced longitudinal/correlational analyses. Methods and data presented in this book with novel experimental designs and protocols, especially longitudinal investigation of multiple imaging metrics from microvascular, micro-structural to systematic functional, metabolic and neuropathological perspectives will help improving diagnosis and early prevention of common diseases at middle age such as metabolic syndrome and early dementia. Some promising prevention strategies such as arts therapy, aerobic exercise and calorie restriction will be introduced additionally with imaging evidence. Results presented will help improving diagnosis accuracy, staging, and determining phases and trajectories of disease progression with age, endothelial dysfunction and deficits in metabolic syndrome. This book will provide the current state-of-the-art and new frontiers of brain function and metabolic changes at age using multi-parametric functional, structural and molecular imaging techniques in detection, diagnosis and treatment. We will present some forefront and interesting multi-dimensional baseline and longitudinal imaging techniques to serve as a reference and resource book in neuroimaging application and research field. Several distinct detection and application perspectives, including cutting-edge imaging methods from baseline evaluations to longitudinal applications as well as multi-modal and multi-parametric quantifications will be described. The relatively new and advanced data and results together with interesting examples and application demonstrations could help facilitate the generalization, interpretation and applications of these techniques to improve disease diagnosis, quality of life and treatment for metabolic syndrome and brain dysfunction.

Is Aging a Disease? Untangling the Relationship
Michael A. Singer (Faculty of Health Sciences, Queen’s University, Kingston, Ontario, Canada)
In series: Geriatrics, Gerontology and Elderly Issues
Softcover: 978-1-53615-509-9. $95.00.
e-book: 978-1-53615-510-5. $95.00.

Each species has its own characteristic aging trajectory coded by a species-specific developmental program. This developmental program is triggered at the time of fertilization, hence aging begins at conception. Within a species there are considerable variations in the aging phenotype between individuals due to the plasticity of the developmental process and its inherent stochasticity. The evolution of a species is due to genetic changes in its underlying developmental program and when enough genetic changes have accumulated a new species emerges with its own characteristic aging phenotype. Therefore, speciation and aging are linked processes. Over the evolutionary course of the human lineage, culture has been an important driver of evolutionary change. Culture is not restricted to the human lineage but only humans have evolved cumulative culture; the transmission of modified cultural practices across generations. Early cultural innovations such as toolmaking, agriculture and dairy farming had a utilitarian function. However, over the past 100 to 150 years, there has been a significant change in the pace and nature of cultural innovations. Although many cultural innovations still have a utilitarian function, a new category of cultural innovations has emerged that have “entertainment” functions in the domains of social communication and information transfer. In addition, cultural practices by the tobacco, food and technological industries have been used to modify population behaviors, physiology and beliefs. Over the past 50 to 75 years, there has emerged so called chronic non-infectious diseases, which occurrence parallels the development of these new cultural innovations and practices. In addition, culture has now become the primary driver of human evolution. In answer to the question posed by the title of this book, aging is not a disease and diseases are cultural constructs used to define variants in the aging process.
Defense Health Care: Treatment, Performance and TRICARE
Frederick Duncan
In series: Health Care in Transition
Hardcover: 978-1-53615-175-6. $160.00.
For over a decade, Congress and DOD have led a series of efforts to address the governance structure of the Military Health System. In chapter 1, GAO examines (1) measures DOD uses to assess the quality of direct and purchased care, and (2) the extent to which DOD has established performance standards related to the measures and corrective action requirements for providers who do not meet those standards. As reported in chapter 2, or more than a decade, partially in response to congressional mandates, DOD has worked to address inefficiencies in the Military Health System to control costs. Chapter 3 examines the military departments’ planning processes for determining (1) operational medical personnel requirements, including an assessment of the mix of federal civilian, contractor, and active and reserve medical personnel; and (2) the most appropriate workforce mix at MTFs and any challenges in executing their desired workforce mix. The National Defense Authorization Act (NDAA) for Fiscal Year 2008 directed DOD to conduct surveys of nonenrolled beneficiaries and civilian providers about access to care under the TRICARE Standard and Extra options. It also directed GAO to review the surveys’ results. Additionally, the NDAA for Fiscal Year 2017 included a provision for GAO to review access to care under TRICARE Extra. Chapter 4 addresses both provisions. The NDAA 2017 made several changes to the TRICARE program, including the establishment of a new preferred provider network health plan option called TRICARE Select. The NDAA 2017 made several changes to the TRICARE program, including the establishment of a new preferred provider network health plan option called TRICARE Select. The

Advances in Health and Disease. Volume 15
Lowell T. Duncan
In series: Advances in Health and Disease
Hardcover: 978-1-53616-448-0. $250.00.
Advances in Health and Disease. Volume 15 explores the current knowledge relating extracellular calreticulin to human pathologies, focusing on cancer, rheumatoid arthritis, systemic lupus erythematosus, wound repair and the retroviral infection with human T-cell lymphotropic virus type 1. Following this, the authors provide an overview of the tumor markers and scoring systems as well as it’s utilization for effective diagnosis of female adnexal masses. Appropriate discrimination between benign and malignant mass results in the correct choice between conservative and surgical management. This collection also presents the way in which two B-glucans play a vital role in innate immunity modulation, and are therefore predicted to be candidates for alternative therapies against inflammatory diseases. Subsequently, the authors present indications, techniques, complications and treatment regarding the use of polyacrylamide for facial wasting rehabilitation. Medical literature shows how facial wasting is recognized as a stigma of the infection for the patient-self, and as such facial features restoring is crucial to the social life of HIV positive patients. In conclusion, the major issues regard reduced nostril aperture and nasal fossae volume, and degree of sinus pneumatization are presented. Endoscopic sinus surgery and its main use in pediatric patients is described, as well as the advantages of this less invasive surgery.

Health Care

Natural Anti-Aging Plants and Delay of Senescence
Noboru Motohashi, PhD (Meiji Pharmaceutical University, Kiyose-shi, Tokyo, Japan)
In series: New Developments in Medical Research
In series: Plant Science Research and Practices
2019.
Sofcover: 978-1-53616-282-0. $95.00.
Worldwide, human life is headed for longevity. On the other hand, humans have a desire to stay healthy and live longer. However, synthetic drugs are immediately effective, but some drugs can cause serious side effects. From about 100 to 150 years ago, humans have used all diseases for treatment and prevention, using natural resources such as plants, animals and minerals. These natural ingredients can minimize side effects etc. even after long-term administration. In addition, these natural ingredients can also control chronic toxicity etc. in a concentration-dependent manner. Based on these ideas, this book will focus on plant ingredients and plants that can be expected to maintain health until this longevity.
network health plan option called TRICARE Select. GAO examined program policies, procedures, and contracts and interviewed DOD officials and TRICARE regional contractors as reported in chapter 5.

**Government Reports on Health Care for March 2019**

*Eric Beyer*

In series: *Health Care in Transition*


This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of March, grouped according to the topic: Health Care.

*Health Insurance: Requirements, Challenges, and Regulations*

*Wayne M. Matthews*

In series: *Health Care in Transition*


Since January 1, 2014, most individuals have had to maintain health insurance coverage or pay a penalty for noncompliance implemented through the Internal Revenue Code (IRC). To comply with this individual mandate, individuals need to maintain minimum essential coverage, which includes most types of public and private health insurance coverage. A majority of Americans have health insurance from the private health insurance (PHI) market. Health plans sold in the PHI market must comply with requirements at both the state and federal levels; such requirements often are referred to as market reforms. During the Obama Administration, the two federal agencies primarily responsible for administering the private health insurance provisions in the Affordable Care Act (ACA)—the Centers for Medicare & Medicaid Services (CMS) within the Department of Health and Human Services (HHS), and the Internal Revenue Service (IRS) within the Treasury Department—took a series of actions to delay, extend, or otherwise modify the law’s implementation.

**Key Government Reports on Health Care for June 2019**

*A Antoinette Labonté*

In series: *Health Care in Transition*

2020.


This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of June, grouped according to the topic: Health Care.

**HEMATOLOGY**

*A Closer Look at Blood Serum*

*Josefine Boubacar*

In series: *Recent Advances in Hematology Research*


e-book: 978-1-53615-570-9. $82.00.

The opening chapter of this compilation is dedicated to the quantification of selenium and platinum in blood serum by electrothermal atomic absorption spectrometry. While selenium is an essential trace element in many selenoproteins, platinum is found in the human body as a consequence of chemotherapy treatment after the administration of Pt-based drugs. For these reasons, their reliable quantification is extremely important. The authors go on to discuss how the early diagnosis of neurodegenerative diseases is important for more efficient treatment and prophylaxis. Currently, the dominant hypothesis of the pathogenesis of Alzheimer’s disease is amyloid cascade resulting in accumulation of amyloid-β in brain structures. In conclusion, the authors discuss the major barrier to a widespread use of blood serum eye drops represented by the lack of standardized processes for the preparation, conservation, and dispensation of the products. Future perspectives of homologous serum eye drops include the introduction of tailored eye drops screened for the desired content of growth factors for each patient and ocular surface disease.
Erythrocytes: Structure, Functions and Clinical Aspects

Katy Jorissen

In series: Recent Advances in Hematology Research
Softcover: 978-1-53615-914-1. $95.00.

In Erythrocytes: Structure, Functions and Clinical Aspects, the authors summarize advances in human pluripotent stem cells-derived erythroid development and molecular regulatory mechanisms. This research may provide a new perspective on human embryo erythropoiesis and a possible treatment for some hematological diseases. Erythrocytes are well equipped to carry out their functions due to a dynamic cell membrane, their inherent shape and lack of organelles and cytoplasmic viscosity. As such, the following section focusses on the causes of these modifications and their clinical implications. As an example of complexity in research towards the development of erythrocyte membrane-based drug delivery systems starting from animal erythrocyte, morphological, biochemical and drug release profiles will be reviewed in the penultimate chapter. The final chapter investigates the electrochemical behavior of erythrocytes at platinum, carbonaceous, and optically transparent electrodes via polarization and coulometric measurements. The order of magnitude of the quantity of electrons transferred between erythrocytes and electrodes was determined, and potential ranges showing indifference of the electrode toward red blood cells were identified.

Thrombotic Thrombocytopenic Purpura: Causes, Diagnosis and Treatment

Mason Hillam

In series: Recent Advances in Hematology Research
Softcover: 978-1-53615-353-8. $82.00.
e-book: 978-1-53615-354-5. $82.00.

Thrombotic thrombocytopenic purpura is a life-threatening occlusive disorder of the microcirculation that is characterized by systemic platelet agglutination, organ ischaemia, severe thrombocytopenia and fragmentation of red blood cells. In the opening study included in Thrombotic Thrombocytopenic Purpura: Causes, Diagnosis and Treatment, the authors analyze the principal risk factors and causes of this disorder. Thrombotic thrombocytopenic purpura is diagnosed using standard laboratory tests: in addition to microangiopathic hemolytic anemia and consumption thrombocytopenia, classical parameters for hemolysis show an elevated reticulocyte count, an undetectable serum haptoglobin concentration, and a markedly elevated lactate dehydrogenase level as well as the presence of schistocytes on the blood smear. The authors propose that there are other pathologies with moderate thrombocytopenia that we should consider, such as: hereditary thrombotic thrombocytopenic purpura, hereditary hemolytic uremic syndrome, and thrombotic microangiopathies associated with some medications, transplantation or hidden malignancies. The closing chapter aims to revise the management of thrombotic thrombocytopenic purpura in pregnant women. To effectively manage this disorder, it is crucial to obtain a prompt diagnosis, in conjunction with further monitoring and treatment, to avoid fetal loss and maternal complications.

Nonalcoholic Steatohepatitis (NASH): Symptoms, Risk Factors and Treatments

Alain Babin

In series: Hepatology Research and Clinical Developments
Softcover: 978-1-53615-840-3. $82.00.
e-book: 978-1-53615-841-0. $82.00.

Nonalcoholic Steatohepatitis (NASH): Symptoms, Risk Factors and Treatments begins by discussing in detail the main non-alcoholic steatohepatitis symptoms, risk factors and treatments to elucidate relevant issues of this disease. Following this, the authors present the latest data on non-alcoholic steatohepatitis diagnostic methods and their purposes, recommending the use of non-invasive diagnostic methods for screening, initial examination and further monitoring. The closing chapter presents up-to-date serum, genetic and ‘omics’ biomarkers, discussing their advantages and disadvantages in the evaluation of non-alcoholic steatohepatitis.
Autoimmune Disorders: Risk Factors, Pathogenesis and Treatments
Kutty Selva Nandakumar (School of Pharmaceutical Sciences, Southern Medical University, Guangzhou, China)

In series: Immunology and Immune System Disorders
2019.

Autoimmune diseases (ADs) occur when the immune system is mistakenly activated and attacks self antigens present in our body, leading to tissue destruction. Increasing prevalence of ADs is not only a problem for the affected patients but also causes enormous economic burden to the society. Genetic, environmental and epigenetic factors, and interactions between them contribute to the clinical disease outcome. Although most of these diseases are polygenic and multifactorial, and the clinical spectrum differs significantly between the ADs, shared genes and pathogenic pathways attacking specific tissues or organs do exist. Hence, better understanding of the immunological and pathological basis of these diseases will help to design early diagnostic methods, identify new drug targets, optimize treatments to alleviate sufferings of patients, and develop vaccines and methods to control progression of disease manifestations. This book is organized into seven chapters: Detailed description of Multiple Sclerosis (MS), Inflammatory Bowel Disease (IBD) and Psoriasis (Ps); Antibody mediated disease pathogenesis in Rheumatoid arthritis (RA) and type I diabetes (T1D), antibody glycosylation and its critical role in its effector functions; macrophages in inflammation and its resolution and, the use of nanoparticle-based drug delivery systems for ADs are discussed in detail.

Vaccine: Measles and Rubella Vaccination Experience in Zambia
Mazyanga L. Mazaba (The Health Press, Zambia National Public Health Institute, Ministry of Health, Lusaka, Zambia), Seter Siziya, PhD (The Copperbelt University, Michael Chilufya Sata School of Medicine, Department of Clinical Sciences, Public Health Unit, Ndola, Zambia), and Joav Merrick, MD, MMedSci, DMSc (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel; Division of Adolescent Medicine, KY Children’s Hospital, Department of Pediatrics, Lexington, Kentucky, US; National Institute of Child Health and Human Development, Jerusalem, Israel; Division of Pediatrics, Hadassah Hebrew University Medical Centers, Mt Scopus Campus, Jerusalem, Israel; School of Public Health, Georgia State University, Atlanta, Georgia, US)

In series: Pediatrics, Child and Adolescent Health
Edited by: Joav Merrick (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
2019.
Softcover: 978-1-53615-799-4. $95.00.
e-book: 978-1-53615-800-7. $95.00.

Measles is still the cause of disease and even death around the world, and with the modern widespread travel around the globe, it can be spread from one site to another with ease. Rubella infection, especially during pregnancy, can also have important effects on the fetus and the family involved. The WHO African regional target of eliminating measles by 2020 seems unlikely, but in Zambia great strides have been made to eliminate measles. Following the successful implementation of the MR (measles-rubella) vaccination campaign, the MR vaccine should be introduced in the routine immunization program to replace single measles containing virus vaccine. In this book, we review the status of measles and rubella vaccination campaigns and incidence rates of these diseases in Zambia. Vaccination campaigns were conducted in 2010 and 2012 using a single measles vaccine and in 2016, a combined measles-rubella vaccine was administered in a campaign. The measles incidence rate reduced following the campaigns in 2010 and 2012. However, the incidence of measles slightly increased after the 2016 vaccination campaign. Meanwhile, the incidence of rubella increased in 2011 following the 2010 measles vaccination campaign. Thereafter, the decline in the incidence of rubella was observed and sustained with the measles-rubella vaccination campaign in 2016. There has been great progress towards the control and elimination of measles in Zambia.
The objective of the first chapter is to explain fertility preservation decisions as related to reproductive-aged cancer patients’ experiences and desires for future fertility. The second chapter discusses fertility preservation and how it can be used to help cancer patients retain their fertility. It is an emerging discipline that now plays a central role in the care of reproductive women with cancer. This chapter examines several key factors underlying why more men who have sex with other men are not using Pre-Exposure Prophylaxis, including (1) lack of awareness of Pre-Exposure Prophylaxis, (2) lack of exposure to other Pre-Exposure Prophylaxis users, (3) general lack of interest in learning more about Pre-Exposure Prophylaxis, (4) lack of willingness to avail themselves of existing information sources and resources to learn more about Pre-Exposure Prophylaxis, (5) perceived stigma associated with the use of Pre-Exposure Prophylaxis, and (6) perceived obstacles needing to be overcome in order to give Pre-Exposure Prophylaxis adoption more serious consideration. The aims of this chapter is to describe some of these recent studies, showing the potential of the flavonoids anthocyanins, flavones, quercetin, hesperetin and naringenin in the control of adipocyte inflammation. The possible biochemical pathways will be presented, as well as the results observed in in vitro and in vivo studies. Chapter five explains how plasma transthyretin measures the methionine role in metabolic processes that requires deregulating the transsulfuration pathway and methylating homocysteine. It measures nutritional wellbeing and the impact of metabolism on the outcomes of human disease in relationship to severe inflammatory disorders, chronic disease, and cancer. The final chapter examines chronic kidney disease and how it is a significant burden on the economy and healthcare system globally as the patients suffering from it requires long term renal replacement therapy in the form of dialysis or renal transplant.

The aim of the opening chapter of Advances in Health and Disease. Volume 11 is to provide evidence on the indicators of fluid distribution and cellular integrity evaluated by bioelectrical impedance analysis in athletes of different performance levels and non-athletes. The second chapter presents a specific examination of the aryl hydrocarbon receptor among xenobiotic receptors, with a commentary on the preventive and therapeutic abilities of lignans against various diseases associated with the aryl hydrocarbon receptor signaling pathway, including cancers, teratogenesis, inflammatory bowel diseases, osteoarthritis, metabolic syndrome and diabetes, allergic diseases, autoimmune diseases, Alzheimer’s disease, Parkinson’s disease, leukemias and lymphomas. Additionally, the authors discuss scrub typhus, a bacterial disease caused by Orientia tsutsugamushi (O. tsutsugamushi), and how it is recognized as an important cause of fever in Asia. The objective of the next section is to conduct a literature review to identify key risk factors that contribute to the risk of infection and transmission of disease in residential aged care and community care settings. The indications and complications of surgical management of Choanal atresia will be thoroughly illustrated in the following chapter, mainly focusing on the role of the transnasal endoscopic approach. Recently, a great deal of emphasis has been placed on the creation of more effective drugs for prevention and management of obesity and obesity-related diseases. The penultimate chapter examines the peptide fraction derived from tissue of Antarctic hydrobiont and how it has beneficial effects on the diet induced obesity in rats through the influence on oxidative status, development of inflammation, and disorders of the serotonergic system, which are considered to be the key pathogenic mechanisms of obesity-associated metabolic disturbances. The focus of the final chapter is to describe the demographic, clinical and microbiological characteristics of S. maltophilia infections in pediatric patients during a two year period (2016 to 2018) in a tertiary-care hospital in southern Brazil.
Advances in Health and Disease. Volume 12
Lowell T. Duncan
In series: Advances in Health and Disease
Hardcover: 978-1-53616-060-4. $250.00.
e-book: 978-1-53616-061-1. $250.00.
The opening chapter of Advances in Health and Disease. Volume 12 suggests that antiviral treatments and drug resistance requires further research. Likewise, there is a necessity for research based on clinical trials in both human and animal models, aimed at introducing new drugs with proven efficacy that are devoid of side effects for the treatment of influenza in the pediatric population. Following this, the authors demonstrate that foreign body aspiration should always be considered in the differential diagnosis of pediatric hemoptysis. After a brief description of the complex relationship between circulating ovarian hormones and the estrogens biosynthesis that occurs in normal breast adipose tissue, the authors discuss the impact of abnormal weight gain on the risk of breast cancer. The present study aims to address how sildenafil treats multiple sclerosis, Alzheimer’s, diabetic encephalopathy and Parkinson’s, thus clarifying its mechanism of action. The updated knowledge on the possible benefits of sildenafil and its homologues in the treatment of pulmonary arterial hypertension and other common diseases is also reviewed. One section explores its author’s experience contracting measles to elucidate the importance of continual research into treating this virus. Next, the authors determine that vasopressin plays an important role in the development of schizophrenia-like symptoms, however, its possible pathogenic or therapeutic role during the course of the disease should be analyzed in more focused experiments. The diagnosis of dysentery in massive flood areas is discussed, particularly focusing on endoscopy, ultrasound scan, microscopic stool examinations and other advanced diagnostic tests. In closing, the authors review the current knowledge on the utility of tyrosine kinases for the molecular classification of bladder cancer and discuss different therapeutic approaches.

Advances in Health and Disease. Volume 13
Lowell T. Duncan
In series: Advances in Health and Disease
Hardcover: 978-1-53616-217-2. $250.00.
Advances in Health and Disease. Volume 13 begins by examining how lipid abnormalities in chronic kidney disease attract continuous attention due to their unclear involvement in chronic kidney disease patient outcomes. If kidney function declines, inflammation and oxidative stress progress and lipid disturbances develop, and malnutrition may ameliorate dyslipidemia in advanced chronic kidney disease. Although rare, pancreatic trauma can significantly impact the life of a patient, with some requiring a total pancreatectomy which will result in pancreatogenic diabetes. Diagnosis can be difficult, especially in children, with clinical symptoms being absent in many. As such, the authors discuss the current scientific literature on the diagnosis and management of pancreatic trauma and the promising use of autologous islet cell transplant in these patients. The authors go on to present the state-of-art knowledge on the effects of adenotonsillol ectomy and rapid maxillary expansion on the dentofacial development of children, clarifying what might be expected regarding facial growth after normalizing the mode of breathing and increasing the width of the maxilla. Following this, this compilation summarizes the growth and development processes of the face to describe the theories and mechanisms of facial growth and development. Next, the management of multi-drug resistant tuberculosis and extreme drug resistance tuberculosis is discussed, along with the latest World Health Organization guidelines and policy recommendations for treatment. The literature regarding the clinicopathological features of mucosa-associated lymphoid tissue of the dura is reviewed, focusing on how to differentiate mucosa-associated lymphoid tissue of the dura from clinical and pathologic mimics. In the closing study, changes in the molecular mechanism inside an ensemble up to 3 mio Daltons in human muscle in members of one family from eight to 67 years old are investigated using non-invasive gravitational mass spectroscopy.

Advances in Health and Disease. Volume 14
Lowell T. Duncan
In series: Advances in Health and Disease
2019.
Hardcover: 978-1-53616-380-3. $250.00.
e-book: 978-1-53616-381-0. $250.00.
Advances in Health and Disease. Volume 14 opens with a chapter on Zika Virus, a ribonucleic acid virus of the Flaviviridae family, genus Flavivirus, Spondweni group, Zika species, isolated for the first time in 1947 from a primate in the Zika Forest in Uganda, a natural reserve near Entebbe. Next, the authors discuss multiple myeloma, which is characterized by the expansion of monoclonal plasma cells in the bone marrow. In about 95% of cases, the aberrant plasma cells produce a monoclonal immunoglobulin called monoclonal component that can be considered a marker of the disease. Hyperbaric oxygen therapy is explored in the context of sudden sensorineural hearing loss, where it has been used as a treatment since 1979. This exposes a patient to 100% oxygen at a pressure level higher than 1 atmosphere absolute in a specially designed sealed chamber. This facilitates a delivery of increased partial pressure of oxygen to the tissues. The authors discuss off-label uses of ruxolitinib, particularly in the treatment of myelofibrosis and polycythemia vera, as drugs can sometimes have uses beyond the official approved indication. Following this, summaries of the current scientific
knowledge and understanding of the clinical findings and health consequences of benzene exposure among children are presented. Children at various developmental stages have unique physical risk factors when exposed to toxic chemicals such as benzene due to their levels of mobility, oxygen consumption, hormonal production, and overall growth. Lastly, a hybrid quantitative structure–activity relationship model was developed for the prediction of aqueous toxicity. The data concerning 92 substituted benzenes was separated into two disjointed subsets, respectively 74 elements for calculating and testing the model, and 18 elements for its external validation.

**Ebola Virus Disease (EVD): Outbreaks, Control and Prevention Strategies**

*Hilaire Verreau*

In series: *Virology Research Progress*

2019.

Softcover: 978-1-53616-291-2. $82.00.


To mitigate the spread of the rare and deadly disease Ebola, Ebola Virus Disease (EVD): Outbreaks, Control and Prevention Strategies begins with the proposition of a mathematical model with vital dynamics and two preventive measures: quarantine and isolation. Humanitarian issues in Ebola prevention and control are explored, as well as the cultural practices and social norms during outbreaks. Additionally, some innovative approaches in the humanitarian response to prevention and control are discussed. The authors expose the dilemma Ebola poses to within the healthcare system, where healthcare providers are caught between the over-arching quest for self-preservation from a highly virulent disease and the professional demand of prioritising the interests of the patients over self. In conclusion, the authors describe successfully developed drug candidates from their laboratory for the treatment Ebola using EBOV protein structure, such as VP24, VP35, VP40, nucleoprotein, and glycoprotein.

**Infectious Diseases: Response, Recovery and Trends**

*Philippe Georges*

In series: *Microbiology Research Advances*

2019.

Hardcover: 978-1-53616-401-5. $230.00.


An infectious disease threat is unique because of the transmissibility of diseases and the mobility of human populations. Infectious disease threats in recent years—such as Zika and Ebola outbreaks—have heightened the United States’ attention to future potential threats, and raised questions about the nation’s preparedness and response capabilities. Chapter 1 describes funding HHS has made available to awardees through its key preparedness and capacity-building programs—ELC, HPP, and PHEP; and these programs’ performance measurement data on the awardees’ infectious disease preparedness capacity. The World Health Organization (WHO) declared the Zika virus a public health emergency of international concern in February 2016. Zika virus disease can cause adverse pregnancy and neurological outcomes.

Chapter 2 examines information on what is known and not known about the epidemiology of the Zika virus, and any challenges with conducting surveillance and epidemiological studies, characteristics of different diagnostic tests authorized during the outbreak, challenges test manufacturers and users faced, and the extent to which FDA and CDC followed their own communication guidance, and the strengths and limitations of available mosquito control methods, and challenges federal agencies face supporting these efforts. Chapter 3 describes the status of funds obligated and disbursed from the Zika supplemental funding appropriated to HHS and its agencies; and how selected awardees used their Zika supplemental funding, and their experiences with applying for and managing the funding. Chapter 4 examines the status of USAID and State funding for U.S. Zika response overseas, activities supported by these funds, and implementation challenges, if any, and responses to any challenges. The 2014-2015 Ebola outbreak in West Africa caused long-term second-order impacts, including disruptions to health systems, job loss, and food insecurity. As of September 30, 2017, of the $1.6 billion that the U.S. Agency for International Development (USAID) had obligated for the Ebola outbreak. Chapter 5 examines obligations for USAID’s Ebola recovery projects, the status of USAID’s implementation of these projects, and USAID’s evaluation of Ebola recovery efforts. On August 1, 2018, the World Health Organization (WHO) reported a new Ebola outbreak in eastern DRC, about a week after declaring that a separate outbreak had ended in western DRC as reported in chapter 6. Between September 2018 and May 2019, the number of African swine fever (ASF) outbreaks has rapidly increased, most notably in China, triggering economic losses in affected pork-producing countries as discussed in chapter 7. As reported in chapter 9, Tuberculosis (TB) remains a major, and evolving, health challenge in many parts of the world and a priority for the U.S. Congress and international community. Congress has long taken an interest in infectious disease prevention and control. According to chapter 10, the measles, mumps, and rubella (MMR) vaccine is 97% effective in preventing infection and related deaths, and routine MMR vaccination is recommended for all children.
Listeriosis Outbreaks: Symptoms, Risk Factors and Treatment
Christopher J. Horan
In series: Bacteriology Research Developments
Softcover: 978-1-53615-227-2. $95.00.
Listeria monocytogenes is a foodborne pathogen transmitted to humans through ingested food. This bacterium is responsible for human listeriosis, an extremely serious infection with a high mortality rate. In Listeriosis Outbreaks: Symptoms, Risk Factors and Treatment, the authors study the symptoms, risk factors and treatment of human listeriosis. L. monocytogenes is more deadly than other common food-borne pathogens such as the Campylobacter species, Salmonella enteritidis and Vibrio species. The authors have focused on listeriosis and the virulence factors of this pathogen for several years, performing a clinical study in collaboration with health institutions from two regions of Spain, Cantabria and Gipuzkoa. Consequently, biomarkers of listeriosis have been identified that may be used to study the disease evolution and trace the susceptibility to infection of specific high-risk groups. Following this, emphasis is placed on the symptoms of listeriosis in game birds in order to provide a description of various forms of the disease. Specific subjects are discussed in depth, such as the etiology of the disease, epidemiology, economic significance, hosts, transmission, incubation period, clinical signs, lesions, diagnostic procedures, principle of disease prevention, treatment and significance in public health. This compilation also reviews literature which may help readers assess large-scale aspects of this antimicrobial treatment for limiting the microbial contamination of food and improving the safety of the food supply, minimizing the risk of foodborne infections. In closing, the listeriosis outbreaks linked to the consumption of ready-to-eat fresh fruits and vegetables are presented, along with the physical and transcriptional organization of stress-associated response mechanisms.

West Nile Virus: Outbreaks, Control and Prevention Strategies
Marinke van Verseveld
In series: Recent Advances in Microbiology
2020.
Softcover: 978-1-53616-589-0. $82.00.
e-book: 978-1-53616-560-9. $82.00.
The opening study included in West Nile Virus: Outbreaks, Control and Prevention Strategies aims to design and implement an efficient data-driven agent-based model of West Nile virus spread, considering highly-mobile humans with a high level of heterogeneous properties. The authors propose a cellular difference equation model for adoption in West Nile virus-agent-based models. Following this, the authors summarize the envelope domain III protein, its production using based models. Following this, the authors summarize the envelope domain III protein, its production using

Living with HIV/AIDS: Challenges, Perspectives and Quality of Life
Julia Pierce
In series: HIV/AIDS - Medical, Social and Psychological Aspects
2019.
Softcover: 978-1-53615-953-0. $82.00.
e-book: 978-1-53615-954-7. $82.00.
The opening chapter of Living with HIV/AIDS: Challenges, Perspectives and Quality of Life is concerned with exploring the implications of living with invisible conditions in both social and professional networks, and how that may impact their overall health and wellbeing. The authors use empirical examples of people living with mental illness and people living with HIV/AIDS to examine how the level of their visible or invisible symptoms played out on their experience of living with such invisible conditions. The goal of the subsequent study is to explore the process of interviewing sero-discordant couples through a participatory action research methodology, as well as the outcome of science-in-action that was developed and formed into social capital by the community of couples living with HIV. The authors also present a theoretical taxonomy on the various themes of microaggressions that people living with HIV/AIDS encounter, including stigmatized language, desexualization and dating/sex-related microaggressions, dehumanization and second-class citizenship, pathologies of HIV/AIDS, and criminalization of HIV/AIDS. The final section of this compilation aims to determine the reflexivity of HIV/AIDS survivors and the strategies taken to maintain a good quality of life. The data was collected from information coming from Peer Support Group, People Affected by HIV/AIDS, health workers, Local AIDS Commission and NGOs caring about AIDS using observation, in-depth interview, and documentation methods.
Zika Virus Surveillance, Vaccinology, and Anti-Zika Drug Discovery: Computer-Assisted Strategies to Combat the Menace

Subhash C. Basak, Ph.D. (Department of Chemistry and Biochemistry, University of Minnesota Duluth, Duluth, MN, US), Apurba K. Bhattacharjee, Ph.D. (Department of Microbiology and Immunology, Biomedical Graduate Research Organization (BGRO), School of Medicine, Georgetown University, Washington, DC, US), and Ashesh Nandy, Ph.D. (Centre for Interdisciplinary Research and Education, Kolkata, India)

In series: Virology Research Progress
Softcover: 978-1-53614-970-8. $82.00.
e-book: 978-1-53614-971-5. $82.00.

The bubonic plague, smallpox, HIV/AIDS, malaria, and influenza are some of the worst epidemics/pandemics that afflicted human beings from antiquity to modern times, killing millions of people. The mosquito-borne human-infecting viruses, rotavirus, and the seasonal influenza regularly affect lives across continents in the millions. Currently, we are facing various disease-inducing organisms of the Flavivirus family – the Yellow fever virus (YFV), West Nile virus (WNV), Japanese encephalitis virus (JEV), Tick-borne encephalitis virus (TBEV), Dengue virus (DENV) and Zika virus (ZIKV). Zika virus was first isolated from a febrile rhesus monkey in the Zika forest of Uganda in 1947. It drew out heightened attention following the large number of microcephaly in newborn babies in Latin America in 2015. On 1 February 2016, WHO declared that the association of Zika infection with clusters of microcephaly and other neurological disorders constituted a Public Health Emergency of International Concern. Although the severity and number of ZIKV afflicted cases have gone down lately, the public health community worldwide is keeping a watchful eye on it. ZIKV is an enveloped virus with a positive-sense RNA genome that translates into a single polypeptide, which then gets cleaved into three structural and seven nonstructural viral proteins. As compared to the earlier centuries, we have an expanding repertoire of diverse and fast acting technologies available at our hand to manage and mitigate emerging diseases. Completion of the Human Genome Project has given rise to sequencing methods which can quickly determine the genetic sequence of an alarming pathogen. Following Moore’s law, the power of computers, essential for data analysis and visualization, has grown substantially with time. The combination of genomic data of pathogens, computational modeling methods, and data driven methodologies can lead to a “generic approach” of surveillance, mitigation, vaccine design as well as new drug discovery for emerging pathogens. The four pillars of this may consist of: a) Epidemiological approaches for the characterization of carriers of next possible emerging pathogens; b) Fast computational sequence comparison methods for the characterization of emerging pathogens to understand how novel or severe they could be; c) Once the sequences of the pathogen have been determined, computer-aided vaccine design (CAVD) methods can be used to suggest a set of probable vaccine candidates for quick synthesis and testing in the laboratory; and d) Computer-assisted design of novel therapeutics and their laboratory testing as well as repurposing of already existing FDA-approved drugs. A combination of different classes of methods – in vivo, in vitro and in silico – will be needed to tackle suddenly emerging viruses like the Zika virus. As in many other fields of biomedical research, high throughput and low cost in silico technologies may provide the first line of defense against such emerging pathogens providing decision support systems for the judicious applications of medium throughput in vitro methods and low throughput as well as costly in vivo techniques. An emerging trend in many scientific disciplines is a strong tendency of being transformed into some form of information science. The editors of this book sincerely hope that the four-pronged computer-assisted approach described in this book will help in managing and mitigating emerging infectious diseases like Zika.

MEDICAL DEVICES

Mechanical Ventilation: Applications, Technologies and Ethical Issues
Antonio M. Esquinas (Hospital General Universitario Morales Meseguer, Intensive Care Unit and Non Invasive Ventilatory Unit, Molina Segura- Murcia, Spain)
In series: Advances in Respiratory and Critical Care Medicine
Hardcover: 978-1-53615-002-5. $230.00.
Currently, positive pressure mechanical ventilation has gained widespread recognition as an essential strategy in the treatment of various forms of acute and chronic respiratory failure. Its mechanism impacts directly or indirectly on respiratory physiology (gas exchange) and/or respiratory musculature in various medical/surgical pathological conditions. In addition, positive pressure mechanical ventilation has been recognized as a factor that influence both short- and long-term prognosis of critically ill patients. An example of one of the utilities of noninvasive ventilation is to assist in weaning from mechanical ventilation. For these reasons, mechanical ventilation continues to be a matter of controversy and continuous analysis for medical community and growing field of technological advances that optimize patient-ventilator interaction and outcome. This book has made a selection of the hot topics about indications of mechanical ventilation, technological development advances, ethical and cost associated with mechanical ventilation. Initially, the authors believe an essential approach to positive pressure ventilation is based on physiology (gas exchange, lung mechanics, work of breathing, equipment, etc.), modality of mechanical ventilators (invasive and non-invasive ventilation, nasal high flow, etc.), ventilatory modes (conventional and unconventional modes) and possible complications (ventilatory associated pneumonia, diaphragm dysfunction and ventilator-associated events). The most important mechanical ventilation topics and advances made in critically mechanical ventilated patients include obesity, severe hypoxemic respiratory failure (protective ventilation mode, prone position and extracorporeal oxygenation), cardiac surgery, lung/cardiac transplants, thoracic and brain trauma, pregnancy, and sleep breathing disorders. Patient-ventilator asynchrony, sedation and neuromuscular protocols in mechanical ventilation can be complicated by prolonged mechanical ventilation, weaning failure, sepsis and delirium. Continuous advances are being made in technologies such as diagnosis, monitoring and treatment patient-ventilator asynchrony, respiratory muscle function such as electromyography in diaphragm and lung function by ultrasound or electrical impedance. Weaning from mechanical ventilation, hospital discharge and early mobilization are important aspects of how to identify weaning candidates-screening and planning how release from mechanical ventilation (ventilatory options, protocols), reintubation, rehabilitation and goals-directed mobilization and discharge planning from hospitals receiving long-term mechanical ventilation. Finally, ethical and health-related cost perspectives of mechanical ventilation represent the last essential approach towards emergent issues in mechanical ventilation.

**Men's Health**

**Penile Cancer: Challenges and Controversies**

*Francisco E. Martins, MD (Consultant Urological Surgeon, Department of Urology, University of Lisbon School of Medicine, Hospital Santa Maria, Lisbon, Portugal), and Miroslav L. Djordjevic, MD, PhD (School of Medicine, University of Belgrade, Serbia Department of Urology, Belgrade, Serbia)*

In series: *Cancer Etiology, Diagnosis and Treatments*

In series: *Men's Issues*


Aims and Scope: Although penile cancer is uncommon in the industrialized world, it is highly prevalent in certain regions of the globe such as South America, Africa, and Southeast Asia. It is a highly aggressive malignancy which is often associated with a long delay until diagnosis. This is frequently attributed to shame, fear, and ignorance of the patient. In more advanced stages, it may require extensive amputative surgery that is devastating both physically and psychologically with enormous impact on quality of life, such as loss of conjugal intimacy and self-esteem. On the contrary, in the early stages surgical resection and subsequent disfigurement can be minimized and associated with good cosmetic results. Therefore, it is both patient’s and physician’s task to identify the disease early as the negative impact of the treatment is undoubtedly reduced. This fact emphasizes the importance of education of the patient, primary care physician and the public in general, and should get the proper attention from both the medical and lay media. Simple routine habits like self-examination and desired hygiene will facilitate early diagnosis and prevention. Although penile cancer has undergone significant advances in the field of diagnosis and multidisciplinary treatment in the past two decades, several challenges and controversies still remain unsolved. Diagnostic evaluation and management of less clinically evident disease requires better standardization of practice. Similarly, minimizing adverse sequelae related to interventions cannot be overemphasized. The implementation of multidisciplinary centers of excellence focused on the nuances inherent to an uncommon but aggressive disease will significantly aid to improve treatment outcomes and quality of life. Each chapter’s senior author was hand-selected as a world class resource for the area of expertise and for their willingness to share their surgical insight and wisdom. This book will have contributions from world-renowned experts in this field from different continents, providing an international flare and perspective on the recent developments in the field of diagnosis and
treatment penile cancer as well as reconstruction of the devastating effects of penile mutilation, including the recent interest in phallic reconstruction and ultimately penile transplantation for the penile cancer survivor. This book will also highlight other current challenges and controversies surrounding this disease, especially those related to the management of locally advanced and metastatic involvement. This book, with its multidisciplinary approach, is intended to provide a comprehensive discussion and benefit every reader, junior or senior, world over who is interested in and deals with patients afflicted by penile cancer, including the urologic oncologist, the radiation oncologist, the medical oncologist, the urology resident, and last but not least the primary care physician.

**NEUROSCIENCE**

**Basilar Artery: A Clinical Review (2 Volume Set)**
Tarik F. Massoud, MD, PhD (Department of Radiology, Stanford University, School of Medicine, Stanford, CA, USA), Lofit Hacein-Bey, MD (Department of Medical Imaging, Sutter Medical Group, Sutter Health, Sacramento, CA, USA; UC Davis School of Medicine, Sacramento, CA, USA), and Ramez Kirollos, MD (Department of Neurosurgery, University of Cambridge and Addenbrooke’s Hospital, Hills Road, Cambridge, UK)

In series: Neuroscience Research Progress
Hardcover: 978-1-53615-304-0, $320.00.

Perhaps no artery in the human body bears as much importance to bodily functions and life as the basilar artery, by virtue of the anatomical territories it serves. This is due to the critical nature of the physiological functions supported by the brainstem, the nearby cerebellum and cerebrum, and the severity of most pathological conditions known to affect this artery, and the risk involved in treating those conditions. This book is a comprehensive resource of knowledge on the anatomical, radiological, developmental, clinical, and technical aspects relevant to the diagnosis and treatment of basilar artery diseases. Until now, no single book has been available as a wide-ranging resource of clinically relevant information on the basilar artery, its pathology, and various treatment options. The co-editors are experienced academic clinicians with active interests in clinical neurovascular imaging and cerebrovascular surgery, who have worked within vibrant hospital and academic settings at the forefront of the best clinical practices related to diseases involving the basilar artery. The co-editors’ clinical experience has been acquired in centers of excellence across the USA, Europe, and the Far East. In compiling this book, the co-editors have also called upon many of the world’s best basic and clinical neuroscientists, specializing in knowledge of clinical conditions affecting the basilar artery, for their expert input on the latest clinical management of patients with diseases involving this artery. This book is intended for neuroradiologists, neurosurgeons, neurologists, neurointensivists, and other physicians and scientists engaged in the study and clinical management of patients with disease of the basilar artery and its vascular territories of the brain. It should also serve as a unique educational and research resource for students and more experienced practitioners alike within this important area of clinical medicine.

**Cytochrome c: Roles and Therapeutic Implications**
Natalia Arias (Research Associate, IDLH, University College of London)

In series: Neuroscience Research Progress
Hardcover: 978-1-53614-907-4, $195.00.

Cytochrome C: Roles and Therapeutic Implications provides a thoroughly revised, invaluable resource for university students and researchers in the life sciences, medicine and related fields. This esteemed text attempts to organize available information on this topic to help a better understanding of the role of cytochrome c oxidase and its functional interaction with cytochrome c (Cyt c), the network of oxidation-reduction processes of cyt c in the cell with an emphasis on the implications for apoptosis induction and possible roles of cyt c reducing agents as an attractive strategy to improve neurodegenerative pathologies or cancer. In this book, the authors also reviewed the advantages of cytochrome c oxidase histochemistry to disentangle brain substrates underlying different kinds of learning and memory, from memory engram being retrieved with an untrained hippocampus to its power to identify sensory areas in the teleost fish. Finally, the authors will explore different approaches in cell cultures, animal models, and clinical trials to enhance cytochrome c oxidase activity that lead to improve
brain respiratory metabolism, namely, methylene blue and photobiomodulation. This volume effectively introduces basic concepts that are followed by more specific applications as the text evolves, providing the potential of cytochrome c to lead a revolution in the way neurodegenerative disorders are treated.

**Facial Expressions: Recognition Technologies and Analysis**  
*Flávia de Lima Osório and Mariana Fortunata Donadon (Medical School of Ribeirão Preto, São Paulo University, São Paulo, Brazil)*  
In series: Neuroscience Research Progress  
Softcover: 978-1-53615-254-8. $95.00.  
e-book: 978-1-53615-255-5. $95.00.  
This book brings together contributions from different researchers on the theme of facial expressions, with an emphasis on emotional expressions, which may be of interest to professionals in neuroscience, technology and psychopathology. The reader will find theoretical reviews and experimental studies, with different focuses, among them: instruments of measures for use with adults, adolescents and children; training programs to develop emotional competence in children with emotional and behavioral problems, neural and psychophysical aspects associated with the recognition of facial expressions of emotion; emotional contagions, and studies on positive first impressions. Clinical researchers who wish to learn more about and or update themselves on the subject will benefit from this text.

**Horizons in Neuroscience Research. Volume 37**  
*Andres Costa and Eugenio Villalba*  
In series: Horizons in Neuroscience Research  
Hardcover: 978-1-53616-126-7. $250.00.  
The opening chapter of Horizons in Neuroscience Research. Volume 37 suggests a definition and temporal origin of languages that emerge naturally—without linguistic assumptions or preconceptions—from an analytic and predictive theory of mental evolution. A significant number of Alzheimer’s disease patients present with low circulating plasma levels. As such, studies expressed in the following chapter have shown that leptin treatment reduces amyloid and phosphorylated tau accumulation in cultured cells and animal models, with beneficial effects. A systematic review of the structure and function of the cerebellum in normal brain and surveys the distribution of the pathology in a major molecular group of neurodegenerative disease is presented, including Alzheimer’s disease, argyrophilic grain disease, corticobasal degeneration, chronic traumatic encephalopathy, Guam parkinsonian dementia complex, primary age-related tauopathy, and progressive supranuclear palsy. The application of Fourier analysis is illustrated with reference to the spatial distribution of intracellular neurofibrillary tangles in the normal brain and hippocampus of six cases of Alzheimer’s disease, and it is suggested as a useful statistical method for studying the patterns of intracellular neurofibrillary tangles. Additionally, the structure and function of the basal ganglia in normal brain are described, and the role that differential pathology in these regions may have in determining the clinical symptoms in neurodegenerative disease is explored. The authors describe the structure and function of the superior colliculus in the normal brain, as well as the pathological changes in the superior colliculus which may explain eye movement problems in two neurodegenerative disorders: progressive supranuclear palsy and chronic traumatic encephalopathy. The results obtained in the penultimate chapter corroborate the toxic effects at cellular and molecular levels that the administration of L-DOPA has, even in a healthy system, affirming the need to find a Parkinson disease treatment alternative. The final study investigates the relationship between the number of flow experiences in daily life and brain activation by near-infrared spectroscopy.

**Movement 2018: Brain, Body and Cognition**  
*Joav Merrick, M.D., MMedSci, DMSc (National Institute of Child Health and Human Development, Jerusalem, Israel) and Gerry Leisman, M.D., Ph.D. (F. R. Carrick Institute for Clinical Ergonomics, Rehabilitation, and Applied Neurosciences, Garden City, New York, USA)*  
In series: Functional Neurology  
Hardcover: 978-1-53614-833-6. $310.00.  
This book is based on the conference on “Movement and Cognition” held in July 2018 at the Joseph B. Martin Center at Harvard Medical School in Boston, where an opportunity was provided for researchers and practitioners from various disciplines to
share their knowledge and experience in an academic environment that has supported learning and social change for hundreds of years. In this book, readers will find all the abstracts from this conference gathered together in this publication, which the authors hope will be of interest to the scientific community. Joav Merrick, MD, MMedSci, DMSc, born and educated in Denmark is professor of pediatrics, child health and human development affiliated with the Division of Pediatrics, Hadassah Hebrew University Medical Center, Mt Scopus Campus, Jerusalem, Israel, Kentucky Children’s Hospital, University of Kentucky, Lexington, United States and professor of public health at the Center for Healthy Development, School of Public Health, Georgia State University, Atlanta, United States, the former medical director of the Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem and the founder and director of the National Institute of Child Health and Human Development in Israel. Gerry Leisman, MD, PhD, is an Israeli neuroscientist educated in the United Kingdom and the United States in Medicine, Neuroscience, and Biomedical Engineering at Manchester University. He additionally received a PhD in Neuroscience and Biomedical Engineering from Union University in 1979. He is currently Full Professor and Research Fellow at the University of Haifa in Israel. He is also concurrently Director of the National Institute for Brain and Rehabilitation Sciences, a global research institute with laboratories in Gilbert, Arizona, United States, Nazareth and Zevulun, Israel and in Havana, Cuba. He holds a Full Professorship in Rehabilitation Sciences from Israel’s Council of Higher Education (Malag). He concurrently is Professor of Restorative Neurology at the University of Medical Sciences in Havana, Cuba. He is Editor-in-Chief of the journal Functional Neurology, Rehabilitation, and Ergonomics.

Neurological Diseases: From Diagnosis to Treatment
Philip L. Thygesen
In series: Neurology - Laboratory and Clinical Research Developments
2019.
Softcover: 978-1-53616-205-9. $82.00.
e-book: 978-1-53616-206-6. $82.00.
In Neurological Diseases: From Diagnosis to Treatment, the authors provide an overview of the most important pathogenic aspects which indicate that therapeutic apheresis can be a supportive therapy in systemic autoimmune diseases such as renal and neurological disorders. Next, the authors examine whether ceftriaxone could influence aluminum brain neurotoxic effects through a study wherein four groups of adult male Wistar rats underwent four different treatments via stereotaxic brain surgery. The concluding study proposes an implementation of a concept of neuropalliative and rehabilitative care for patients with progressive neurological disease within the systems of health and social care in the Czech Republic.

The Vasculitides, Volume 1: General Considerations and Systemic Vasculitis (Second Edition)
David S. Younger, M.D.(Department of Neurology, New York University Langone Medical Center, New York, NY, US)
In series: Public Health in the 21st Century
Softcover: 978-1-53615-133-6. $310.00.
Systemic and nervous system vasculitides are a heterogeneous group of related disorders, each characterized by vascular inflammation such that they have the potential to cause serious morbidity and mortality if unrecognized and therefore untreated. Systemic vasculitis affect all populations and every nationality and walk-of-life, from childhood to older age. The first edition of The Vasculitides, published in 2014, met the urgent need for a clear, concise, and reliable textbook regarding the epidemiology, pathogenesis, clinical presentation, laboratory evaluation and management of these disorders, assembling participants of the 16th International Vasculitis and ANCA Workshop in Paris, France. Five years later, two subsequent meetings have taken place in London and Tokyo. Participants of the 19th International Vasculitis & ANCA Workshop will gather in April 2019 at the University of Pennsylvania for an exceptional venue to share translational scientific discoveries, data from clinical trials, and advances in the clinical assessment, pathophysiology, genetic biomarkers, standard-of-care, and novel therapies of vasculitis. The Workshop participants regathered to update the The Vasculitides, producing an even more cutting-edge two-volume set of books. This is the first book in the set, covering general considerations and systemic vasculitis.
Systemic and nervous system vasculitides are a heterogeneous group of related disorders, each characterized by vascular inflammation such that they have the potential to cause serious morbidity and mortality if unrecognized and therefore untreated. Systemic vasculitis affect all populations and every nationality and walk of life, from childhood to older age. The first edition of The Vasculitides, published in 2014, met the urgent need for a clear, concise, and reliable textbook regarding the epidemiology, pathogenesis, clinical presentation, laboratory evaluation and management of these disorders, assembling participants of the 16th International Vasculitis and ANCA Workshop in Paris, France. Five years later, two subsequent meetings have taken place in London and Tokyo. Participants of the 19th International Vasculitis & ANCA Workshop will gather in April 2019 at the University of Pennsylvania for an exceptional venue to share translational scientific discoveries, data from clinical trials, and advances in the clinical assessment, pathophysiology, genetic biomarkers, standard of-care, and novel therapies of vasculitis. The Workshop participants regathered to update the The Vasculitides, producing an even more cutting-edge two-volume set of books. This is the second book in the set, covering vasculitis of the nervous system and treatments.

Central Nervous System

Spinal Cord and Spinal Column Tumors
Alessandro Landi, MD, PhD, Fabrizio Gregori, MD and Roberto Delfini (University of Rome “Sapienza”, Department of Neurology and Psychiatry, Rome, Italy)
In series: Cancer Etiology, Diagnosis and Treatments
In series: Neuroscience Research Progress
2020.
A spinal column tumor is a cancerous (malignant) or noncancerous (benign) growth that develops within or near the spinal cord or within the bones of the spine and aren’t as common as brain tumors, but they do occur. The majority of spinal cord tumors are found in children and young adults, but anyone can be diagnosed with a tumor at any point in their life. Treatment for a spinal tumor may include surgery, radiation therapy, chemotherapy or other medications. Surgery can range from a minimally invasive procedure to complex reconstruction depending on the severity of cancer involvement. This book aimed to have a complete and detailed update on spinal oncologic pathology and the most advanced techniques for diagnosing and managing spinal cord and spinal column tumors. From the fundamentals of spinal cord anatomy and spinal tumors pathology to the clinical evaluation, radiological diagnosis and treatment techniques for specific spinal tumors. The book is divided into two sections, one on spinal cord tumors and one on vertebral column tumors. The text contains multidisciplinary notions on surgical approaches for resection, reconstruction, decompression and stabilization for spinal tumors. Furthermore, the text contains important updates on the diagnosis and treatment of vertebral metastases with particular attention to diagnostic algorithms. It contains contributions and experiences of some of the world’s leading experts in the treatment of spinal oncological pathology, making this work rich and complete. This book is aimed at neurosurgeons, orthopedic surgeons and specialists who require a complete text on current techniques in the management of spinal tumors.
Nutrition and Diet

Child Nutrition Programs: Background and Current Issues

Daniel D. Coleman

In series: Nutrition and Diet Research Progress

The term child nutrition programs refers to several U.S. Department of Agriculture Food and Nutrition Service (USDA-FNS) programs that provide food for children in institutional settings. These include the school meals programs—the National School Lunch Program and School Breakfast Program—as well as the Child and Adult Care Food Program, Summer Food Service Program, Special Milk Program, and Fresh Fruit and Vegetable Program. Chapter 1 provides an overview of these and other current issues in the child nutrition programs. The child nutrition programs and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) were last reauthorized in 2010 as reported in chapter 2. Chapter 3 describes how each program operates under current law, focusing on eligibility rules, participation, and funding. This introductory section describes some of the background and principles that generally apply to all of the programs; subsequent sections go into further detail on the workings of each. Chapter 4 examines what is known about SFSP participation, other programs that help feed low-income children over the summer, and challenges, if any, in providing summer meals to children and the extent to which USDA provides assistance to address these challenges. Chapter 5 is the statement of Kathryn A. Larin on improvements needed in the summer meals program. Chapter 6 provides an overview of the WIC program, including administration, funding, eligibility, benefits, benefits redemption, and cost containment policies. Chapter 7 assesses the extent to which leading research practices were followed in USDA’s most recent review of vegetables available under WIC. Chapter 8 discusses SNAP E&T programs, including program participants, design, and USDA oversight, and USDA’s efforts to address SNAP program integrity, including improper payments, as well as recipient and retailer fraud.

Comprehensive Guide to Nutrition in Polycystic Ovarian Syndrome (PCOS)

Anncchen Weidemann (Consultant Dietician, Vredenburg, Western Cape, South Africa)

In series: Nutrition and Diet Research Progress
Softcover: 978-1-53615-655-3. $95.00.
e-book: 978-1-53615-656-0. $95.00.

Polycystic ovarian syndrome (PCOS) is the single largest cause of infertility in women of childbearing age, with the incidence having risen from around 15 % to 21 % within 6 – 8 years. Not only has the incidence risen in this population, but in adolescents, PCOS is being diagnosed earlier and more frequently, than ever before. There is no written “diet” or single food that cures PCOS, but factors from Westernized eating such as trans fats, advanced glycation end-products and fructose overload, are factors which affect both the development of PCOS and the resistance to drug-related treatment of it. For the woman with PCOS, whether trying to fall pregnant of manage symptoms, it is of cardinal importance to understand that a “diet mentality” is inappropriate, since the entire lifestyle should be changed to favour the menstrual cycle and the production of its hormones for at least 3three months prior to expecting normal ovulation. The awakening and development of the primordial follicle destined to become the ovulatory one, 85 days prior to ovulation, points to the compulsory consistency of improved eating habits and lifestyle. Almost every single food/meal/drink/snack has an influence on your ovulatory capacity. It is imperative that the PCOS woman seeking help for either symptomatic relief or fertility, understands the relationship of the hormonal chaos of PCOS to the hormonal chaos of a poor diet. The standard dietary composition, of 20 % protein, 50 % carbohydrate and 30 % fat, was used to treat PCOS since the beginning of research, after the discovery of PCOS as Stein-Leventhal syndrome in 1935. Weight loss was known to be the most important factor in treating PCOS, but no progress was made, and the drop-out rate of diets given to these women was extremely high. For some reason, women with PCOS could not adhere to a formal diet, and battled weight loss, although small studies could not confirm this. The answer to this probably lies in the disturbance of their hunger and satiety cascade, regulated by insulin. New drugs have seen the light and were tested on females with PCOS with mediocre results, showing that something else but the PCOS was at play. This book is dedicated to show the power and strength of poor dietary habits (and visa versa) on drug treatment of PCOS, and the lack of need for it when dietary habits and lifestyles are improved. In PCOS, drugs could probably never win over a poor eating lifestyle, which is a point often missed by fertility specialists eager to help with a quick -fix, rather than a longer process that can be maintained over the long-term. The mere fact that in women undergoing IVF treatment, end-stage-glycation products were found in their oocytes, tells a story of the horrendous effect of poor dietary habits on fertility. Both the keto-genic diet and intermittent fasting (done under professional dietetic supervision), either apart or together, have provided a means for quicker and safer weight loss, especially if time is of the essence in older couples.
Nature and Nutrition: A New Era of Therapeutic Herbs

AK Mohiuddin (World University of Bangladesh, Dhaka, Bangladesh)

In series: Nutrition and Diet Research Progress


The use of herbal medicinal products and supplements has increased tremendously over the past three decades with not less than 80% of people worldwide relying on them for some part of primary healthcare. This past decade has obviously witnessed a tremendous surge in acceptance and public interest in natural therapies both in developing and developed countries, with these herbal remedies being available not only in drug stores, but now also in food stores and supermarkets. The use of herbal remedies has also been widely embraced in many developed countries with complementary and alternative medicines (CAMs) now becoming mainstream in the UK and the rest of Europe, as well as in North America and Australia. In the developed countries, the most important among many other reasons for seeking herbal therapy is the belief that it will promote healthier living. Herbal medicines are, therefore, often viewed as a balanced and moderate approach to healing and individuals who use them as home remedies and over-the-counter drugs spend huge amount of money (in excess of billions of dollars) on herbal products. As the global use of herbal medicinal products continues to grow and many more new products are introduced into the market, public health issues, and concerns surrounding their safety are also increasingly recognized. Although some herbal medicines have promising potential and are widely used, many of them remain untested and their use also not monitored. This makes knowledge of their potential adverse effects very limited and identification of the safest and most effective therapies as well as the promotion of their rational use more difficult. It is also common knowledge that the safety of most herbal products is further compromised by lack of suitable quality controls, inadequate labeling, and the absence of appropriate patient information. It has become essential, therefore, to furnish the general public including healthcare professionals with adequate information to facilitate better understanding of the risks associated with the use of these products and to ensure that all medicines are safe and of suitable quality.

Oregano: Properties, Uses and Health Benefits

Gema Nieto Martínez, University of Murcia (UMU), Campus de Espinardo, Facultad de Veterinaria, Murcia, Spain

In series: New Developments in Medical Research

In series: Plant Science Research and Practices

2019.

Hardcover: 978-1-53616-284-4. $230.00.


Humans have employed medicinal plants for thousands of years in traditional medicine. Oregano has been cultivated mainly for centuries in the Mediterranean area, although it now can be found on most continents. Oregano is one of the most popular plants in Spanish traditional remedies and its leaves have been used in traditional medicines in order to treat illness such as aching muscle, skin sores, asthma, digestion disorders, infections, inflammation or maintaining general health. In addition, oregano has been used since ancient times as an ingredient in Mediterranean diet. In this sense, there are several species of oregano, being Spanish thyme or Origanum vulgare, the spice variety sold most in the United States and Europe. Nowadays the use of oregano is not exclusive for culinary proposes, because the consumers’ concerns about the use of synthetic additives into foods have led the food industry to the search for green strategies. In this sense, oregano extracts, essential oils and individual compounds from this herb have demonstrated antioxidant, anti-inflammatory, anticancer, and antimicrobial actions, which may contribute to the capacity to avoid human infections or to protect the cardiovascular and nervous systems by blood glucose and lipid modulation. Therefore, based on the current scientific literature, oregano essential oil can be considered as a rich source of bioactive compounds and its addition to food matrices transmit these benefits; this approach can be used as a tool.
to generate functional foods. Results obtained from numerous studies can help to exploit the use of the Origanum EOs studied as the functional food and pharmacological ingredients for promoting health.

Pork Consumption and Health
Frank L. Moore
In series: Food and Beverage Consumption and Health
Softcover: 978-1-53614-991-3. $82.00.
e-book: 978-1-53614-992-0. $82.00.
In this compilation, the authors provide an overview of the existing literature on the content of nine most abundant minerals (potassium – K, phosphorous – P, sodium – Na, magnesium – Mg, calcium – Ca, zinc – Zn, iron – Fe, copper – Cu and manganese – Mn) in major raw and cooked pork meat cuts. The ingestion of raw or undercooked pork poses a public health risk, since pork is the main transmitter of parasites, which include the protozoa Toxoplasma gondii and the helminths Trichinella spiralis and Taenia solium. These three ‘T’ porkborne parasites have been responsible for most of the porkborne illnesses throughout history, and they are still endemic and therefore an important public-health concern. In the concluding study, Spearman’s correlation coefficient was used to study the relationship salmonellosis and explanatory variables. Second, a multilevel linear regression analysis was carried out with two levels: region, occidental and oriental, European countries, and climate. Additionally, Stata ®14 version was used in the statistical analysis.

Vitamins and Supplements

Encyclopedia of Vitamins: New Research (4 Volume Set)
Lindsey Valdez
In series: Nutrition and Diet Research Progress
Hardcover: 978-1-53615-693-5. $644.00.
This 4 volume set covers a wide range of topics, including: liquid chromatography · vitamins · vegetables · cardiovascular disease · skeletal health.

OBSTETRICS AND GYNECOLOGY

Inositols: Guide to Practical Applications in Obstetrics and Gynecology
Vittorio Unfer (A.G.UN.CO Obstetrics and Gynecology Center, Rome, Italy)
In series: Therapeutic Approaches in Common Obstetrics and Gynecological Disorders
This book offers a valuable mine of clinical information for health professionals and researchers. It gives an overview of the critical role played by Inositols in the therapeutic approach to common obstetrics and gynecological disorders. Inositols are a family of simple carbohydrates naturally found in several foods and human cells. There are potentially nine stereoisomers of Inositols, among them being myo-inositol (MI) and, to a lesser extent, D-chiro-inositol (DCI). These are the most important isomers for the physiological processes in humans. They exert different actions in the control of glucose homeostasis: MI regulates the activation of glucose transporters and glucose utilization, while DCI modulates the glycolysis synthesis. Once incorporated into phosphoglycans, they act as second messengers involved in the signaling transduction cascade of insulin. The metabolism of Inositols is dysregulated in patients with Polycystic Ovary Syndrome (PCOS), highlighting the crucial link between insulin resistance and inositol deficiency in PCOS patients. Therefore, several pre-clinical and clinical studies have been carried out to evaluate their therapeutic usefulness in pathologies where there is an imbalance in MI and DCI levels (from PCOS and gestational diabetes mellitus to infertility). The clinical evidence has demonstrated that MI can be considered widely safe and well tolerated, giving prominence to this versatile molecule. In several trials, the beneficial effect of MI in improving the metabolic and endocrine profile of women with PCOS has been highlighted extensively. Further analyses have shown that the physiological MLDCI ratio (40:1) is the optimal approach for improving oocyte follicular development and oocyte maturation as well as ovary stimulation and pregnancy outcomes in in vitro fertilization
(IVF) procedures. Furthermore, the reader is introduced to a broader area encompassing the Inositols scenery from the history to Inositols nutritional importance, the therapeutic use in preeclampsia, gynecologic oncology, fetal programming as well as their resistance and substance interaction. All these interesting topics will be discussed and deepened in the present book, giving the opportunity to explore in detail every aspect of this effective molecule, bringing the instructions from this guide to everyday practice.

**Pelvic Inflammatory Disease**

*Daniel Abehsera, M.D. (Obstetrics and Gynecology Department Quirón University Hospital Málaga, Spain)*

In series: Obstetrics and Gynecology Advances


Softcover: 978-1-53615-193-0. $82.00.

e-book: 978-1-53615-194-7. $82.00.

Pelvic inflammatory disease (PID) is an entity whose diagnosis is not always easy. The PID comprises a wide range of clinical forms ranging from banal to severe disease processes that compromise the life of the patient. The etiologic diagnosis is not always possible, because the germs responsible cannot always be detected by the usual culture medium, which is why the use of molecular biology techniques is required. The classical definition of PID is a secondary infection of the female genital tract, due to infection of a sexually transmitted disease like Chlamydia trachomatis, or Neisseria gonorrhoea. This notion is being displaced by the concept of PID as a secondary infection by a germ from the altered vaginal flora. The interpretation of complementary tests is difficult because severe cases can present with normal analytical profiles, and an absence of findings on imaging tests. Usually, when an image of pelvic abscess is observed, it usually indicates a failure of medical treatments; however, it is possible to perform a step prior to surgical treatment by ultrasound-guided puncture of the abscess. The use of laparoscopy in the PID is very important for both diagnosis and treatment when there is a failure of drug therapy. An early approach to the disease is essential to prevent damage in the female genital tract that will compromise the fertility of the patient in the future.


*Gabriel Adams and Edna Dunn*

In series: Cancer Etiology, Diagnosis and Treatments


Hardcover: 978-1-53615-697-3. $495.00.

e-book: 978-1-53615-698-0. $495.00.

This 3 volume set covers a wide range of topics, including: gemcitabine · oophorectomies · breast cancer growth inhibition · exosomes · tumor infiltrating lymphocytes.

**Frontiers in Leukemia Pharmacotherapy**

*Lunawati L. Bennett (Professor of Pharmaceutical Sciences, Tenured Union University College of Pharmacy, Jackson, TN, US)*

In series: Cancer Etiology, Diagnosis and Treatments


Frontiers in Leukemia Pharmacotherapy provides a comprehensive overview of the various leukemic disorders found in both children and adults, with an emphasis on current and novel treatment approaches for the healthcare practitioner. By focusing on the unique therapeutic challenges of leukemia, this book aims to meet the diverse needs of physicians, pharmacists, nurses, and other healthcare professionals with an interest in serving patients with leukemia. This comprehensive book is divided into nineteen chapters. Content includes information on specific leukemic disease states in both children and adults. Written by researchers and clinical practitioners, chapters cover a wide array of leukemic topics. Topics include understanding the molecular and genetic basis of acute and chronic leukemia, pharmacology of anti-leukemic agents including traditional chemotherapies, targeted immunotherapy, and tyrosine kinase inhibitors. The epidemiology, etiology, pathogenesis, disease classification, clinical presentation, pathologic features, diagnosis, prognosis, and treatment guidelines for myelodysplastic syndrome,
promyelocytic leukemia, pediatric and adult acute and chronic leukemia are other topics covered in more detail. Other topics include: Redox homeostasis occurring in leukemia and the role of antioxidants, supportive care for the leukemic patient experiencing complications from chemotherapy, palliative care for termination of those with leukemia, pharmacometrics using computational modeling to support drug development in leukemia, and future agents that are in clinical trials in our fight against leukemia. Reputable books, journals, monograms, clinical trials, and other resources were used to provide up-to-date medical information useful to assist healthcare professionals in the management of leukemia. Frontiers in Leukemia Pharmacotherapy is an excellent resource for curious healthcare professionals involved in the care of leukemia disorders.

Horizons in Cancer Research. Volume 71
Hiroto S. Watanabe
In series: Horizons in Cancer Research
Hardcover: 978-1-53615-207-4. $250.00.

Horizons in Cancer Research. Volume 71 begins by reviewing the histopathological features of head and neck squamous cell carcinoma and its precursor lesions, risk factors for head and neck squamous cell carcinoma including viral infection, chemical carcinogenic and ethnic predisposition. New knowledge about major pathways and signaling is also presented. Next, the clinical development of PD-1 and PD-L1 inhibitors in head and neck squamous cell carcinoma to date is reviewed with a focus on phase I-III clinical trials. The authors also discuss future considerations and strategies to optimize the benefits of this class of immunotherapeutic agents. Glioblastoma multiforme, the most deadly primary brain tumor in adults, is studied in the following chapter. Various studies show that only 3–5% of glioblastoma patients survive longer than 3 years and nearly 100% of all tumors recur due to therapy resistance. The most challenging aspect in the treatment of glioblastomas is the invasive nature of the tumor cells to the surrounding brain tissue. Current forms of treatment for glioblastoma allow for short-term survival, reflecting an urgent need for the development of a new form of treatment. The authors also present the cellular and molecular mechanisms of glioblastoma underlying the evasion of treatment, rationale for using novel therapeutics currently undergoing clinical trials, and explore promising molecular targets for the development of future therapeutics. This collection goes on to demonstrate the importance of TNF-alpha and its receptors in malignant gynecological and breast neoplasms, the immunological mechanisms in these neoplasms, and the role as possible future targets in the treatment. Information about the mechanisms of c-Myc are presented in order to update previous studies to discuss some of the current paradigms and provide a basis for future studies. c-Myc is a regulator gene that codes for a transcription factor, and it is important for many multidirectional cellular functions. In one study, the structural, energetic, spectroscopic and electronic properties of organometallic Ru(II) complexes of the general formula \( [(η6-arene)Ru(XY)Cl]_2 \) (XY is N,N-(diamine), N,O- or O,O cheating ligands, \( Z = PF_6 \) anion) were calculated by means of density functional theory electronic structure calculations. These complexes, adopting a “piano-stool” geometry, are potent anticancer agents and their anticancer activity against various types of cancers has already been investigated. In the closing contribution, the authors outline the guidelines for sentinel lymph node biopsy in the management of thin melanoma on the basis of its histogenetic features. A histogenetic conception and an uncertain malignant potential appear to be the most significant discriminants on whether or not to perform the biopsy.

Horizons in Cancer Research. Volume 72
Hiroto S. Watanabe
In series: Horizons in Cancer Research
Hardcover: 978-1-53615-812-0. $250.00.

The first chapter of Horizons in Cancer Research. Volume 72 discusses the Ewing’s sarcoma family of tumors, including classic Ewing’s sarcoma of the bone, extraskeletal Ewing’s sarcoma and malignant peripheral primitive neuroectodermal tumor of both bone and soft tissue. The following chapter discusses Primary Ewing’s sarcoma of the base of the tongue, particularly its diagnosis and treatment. Additionally, the authors examine dual proteasome and histone deacetylase inhibitor, dual MDM2 and histone deacetylase inhibitor, and dual bromodomain-containing protein 4 and histone deacetylase inhibitor. The authors go on to examine the genes and proteins involved in mitosis that are proposed as candidates for biomarkers in different types of cancer (colon, lung, prostate, breast and ovarian, among others). The penultimate chapter reviews the published evidence of aromatase inhibitors in breast cancer risk reduction. The recommended patient populations for the use of aromatase inhibitors, expected benefits, adverse effects and monitoring parameters are addressed. The transcription factor and chromatin structure-related aspects of cancer treatment are the focus of the final chapter.
Horizons in Cancer Research. Volume 73
Hiroto S. Watanabe
In series: Horizons in Cancer Research
In Horizons in Cancer Research. Volume 73, after the identification of some small subgroups with a strong biological-molecular identity, the current evidence regarding the prognostic factors of patients with non-eradicable metastatic disease are examined. The goal is to discuss disease subgroups, which may sometimes provide conditions for decisions that are less compliant with current clinical practice and help define new stratification criteria for patients enrolled in prospective studies. Following this, the authors summarize the current knowledge on breast cancer with an introduction on the traditional markers used in the diagnosis of this disease, followed by an account of the emerging markers. Next, the underlying mechanisms of DNA replication, damage and repair are discussed. Further, RAD51 is proposed as a potential means of managing chemoresistant cancers. Certain drugs and strategies can sensitize chemotherapy via impacting on RAD51, which can be developed as chemotherapy modulators. The authors also discuss multiple myeloma, an incurable malignant tumor of plasma cells of the bone marrow, which is the most common primary neoplasm arising in bone. It causes approximately 1% of cancer-related deaths and is the 2nd most common hematological malignancy in the western world. Later, this collection discusses the prevalence and types of infectious complications that patients with multiple myeloma face, as well as present and emerging therapeutic approaches. The concluding study indicates proteins that have a promising future as new anticancer drugs, in conjunction with the in vitro and/or in vivo effects of these bioactive proteins derived from plants.

New Developments in Oncology Research
Marcos T. Blair
In series: Cancer Etiology, Diagnosis and Treatments
In the opening chapter, authors discuss the current literature that describes the application of Palliative Medicine services in advanced cancer, models of Palliative Care delivery by site and mode of practice, cost-effectiveness of early Palliative Medicine referral patterns and national and international Palliative Medicine practice and referral guidelines. The chapter will also discuss the outcomes of Palliative Medicine in Oncology focusing on the improvements in patient clinical and quality of life outcomes. Next, a systematic chapter aims to better explain the mechanisms that underlie electrolyte disturbances in cancer patients, to stress on the serious prognostic implications involved and to provide practical and useful indications for the prompt diagnosis, management and therapy of electrolyte disorders. The authors discuss over thirty Pt(η2-PXnP)Cl2 (n = 5,6,7,8) derivatives in which organodiphosphines create wide varieties of the metallocyclic rings: eight-membered (PC5P, PC2OC2P, PC2NC2P), nine-membered (PC6P, PCO4OP), ten-membered (PC5OP, PC2OCOC2P, PC3OC3P), and eleven-membered (PC8P, PCN6NP, PC60P). Another included study covers eighty five Pt(II) complexes with an inner coordination sphere of cis- PtP2Cl2. The P-donor ligands are organodiphosphines which create four- and five-membered metallocyclic rings with the PCP, PNP, PC-CP, P-CP, PN2P and PCOP types. In the penultimate chapter, the authors examine over forty cis-Pt(η2-PXXXXP)Cl2 derivatives in which organodiphosphines create six-membered metallocyclic rings, and the concluding chapter examines over thirty cis-Pt(η2-PXXXXP)Cl2 derivatives in which organodiphosphines create seven-membered metallocyclic rings.

Plant Flavonoids Affect Cancer Chemotherapeutic Efficacy: A Handbook for Doctors and Patients
Katrin Sak, Ph.D. (Head of the NGO Praeventio, Tartu, Estonia)
In series: Nutrition and Diet Research Progress
Despite intensive work on molecular carcinogenic mechanisms and novel drug development, cancer has still remained an incurable disease. With the hope to gain therapeutic advantage or miracle cure, more than 50% of cancer patients consume various kinds of herbal supplements when undergoing chemotherapeutic treatment with antineoplastic agents. However, numerous preclinical studies on combined treatment of various cancer cells with natural dietary flavonoids and chemotherapeutic drugs have revealed both desired (additive to synergistic) as well as undesired (antagonistic) interactions, meaning that coadministration of flavonoids and chemotherapeutic drugs can lead to both augmentation as well as abolishment of therapeutic efficacy. This book is the first one to systematically compile currently available information about the modulation of chemotherapeutic efficacy by flavonoids, hopefully being an assistant for cancer patients to make conscious choices in selecting proper plant products during chemotherapeutic treatment.
The 3O2 generated by the photolysis process will accept enough energy from triplet-chlorophyll to provide the energy states of a singlet of oxygen (1O2), 1Δg, and 1Σg+, with emissions in the range of 200 – 500 µm. The 1O2 would react with unsaturated fatty acids to form malondialdehyde (MDA). In humans, the methylation of CpG islands in cancerous cells is so high that the sensing ability of the occurrence of environmental changes to genes with CpG islands could be insufficient for genes with CpG islands. House-keeping genes function independently by sensing various types of information from neighboring cells, and supporting the proliferation of cells behaving as cancerous cells so that the cells achieve a malignant, metastatic state. The CpG island-controlled genes (47,000/human haploid genome) and CpG island-independent genes (33,000/human haploid genome) co-regulate in the normal cell systems. FAD, FMN, riboflavin, and derivatives of heme groups are well known as photosensitizers, which emit 1O2 with ROS in the solution in vivo. In sunlight, photosensitizers will function as the generators of 1O2 and ROS. During the daytime, there is a plentiful supply of 1O2 and ROS from the sunlight, and which inevitably constitutes the circadian rhythms of ROS. The repeated evolution of 1O2 and ROS would function to stimulate the methylation of CpG islands. The tubulin structures, extending from the plasma membrane to two centrosomes and located along the sides of the nucleus, are designated as asters. In darkness, the protein complex of NDPK-1/catalase is located in the plasma membrane. However, upon receiving light illumination, the NDPK-1/catalase function captures 1O2 using catalase. The NDPK-1 binds NADH and supplies electrons to bind 1O2 that is bound to the catalase, resulting in the release of a super oxide (O2-·).

The Medulloblastoma Book. Second Edition
Dimitris Kombogiorgas, M.D.(Dr Sulaiman Al Habib Medical Group, Riyadh, Kingdom of Saudi Arabia)
In series: Cancer Etiology, Diagnosis and Treatments
Hardcover: 978-1-53615-152-7. $230.00.
This book offers a unique insight into the “medulloblastoma world,” and provides both a broad review and detailed analysis of this brain tumour. It starts with the history of medulloblastoma as a term, and as a distinct entity in nosology, and then explores in depth, the diagnosis, genetics, neurosurgical, and oncological management of medulloblastoma patients, as well as their outcome and long-term complications. Furthermore, novel therapies and next generation clinical trials in medulloblastoma are discussed. This landmark text is written by leading authorities in the research and treatment of medulloblastoma. It provides information based on clinical trials, major clinical series, and the authors’ outstanding experience and knowledge. It contains numerous, detailed illustrations, which help the reader understand the new knowledge easily. Also, it includes pitfalls and perils of the management of patients with medulloblastoma. The Medulloblastoma Book is useful to both medical specialists such as paediatricians, radiologists, neurosurgeons, and oncologists who are looking for the latest research in an integrated text, containing the current knowledge about medulloblastoma. This book is also useful for medical students, nurses, residents, and young researchers who are interested in medulloblastoma, neurosurgery, and neuro-oncology. This text aims to enrich medical literature throughout the world by providing an integrated understanding of medulloblastoma in a comprehensive and practical manner, by being written by scientists working at the cutting-edge of their specialities.
The Sentinel Lymph Node: Detection, Procedures and Clinical Implications
Ambrogio Pietro Londero, Serena Bertozzi and Carla Cedolini
(Udine University Hospital, Udine, Italy)
In series: Cancer Etiology, Diagnosis and Treatments
Hardcover: 978-1-53614-557-1. $230.00.
The Sentinel Lymph Node: Detection, Procedures and Clinical Implications gathers an overview of the sentinel lymph node biopsy procedure among different surgical settings (i.e., melanoma, breast, thyroid, vulva, endometrium, cervix, colon, anus, liver, gastric, urological and ovarian cancers). This book consists of eighteen chapters; the rationale and the purpose of this technique, which allows adequate lymph node staging while sparing patients from unnecessary complete lymph node dissections and the traditional harmful complications associated with them are discussed. Furthermore, this book outlines the technical aspects of the procedure (which are also accurately covered) from the various intraoperative sentinel node detection techniques to the subsequent sentinel lymph node analysis methods. Some new techniques for node detection, such as the Sentimag® technique (superparamagnetic iron oxide particles detected by a magneto-metric probe) and some new techniques for node analysis, such as the one-step nucleic acid amplification (OSNA), are accurately discussed. Finally, this book provides information also on preoperative lymph node diagnostics and sentinel lymph node biopsy perioperative complications in different nodal districts. In particular, the complications of sentinel node biopsy and for sentinel node dissection are accurately discussed with a particular focus on breast cancer, melanoma and gynecological cancers.

The Story of Hydra: Portrait of Cancer as a Stem-Cell Disease
Shi-Ming Tu, MD (Department of GU Medical Oncology, University of Texas, MD Anderson Cancer Center, Houston, TX, US)
In series: Cancer Etiology, Diagnosis and Treatments
The questions we ask in this book about cancer are actually quite elementary. What is the origin of cancer? Does cancer arise in any cell in the body, or only in certain cells? Is cancer a genetic or a stem-cell disease? We illustrate that cancer is a multicellular rather than a unicellular process, a cellular rather than a genetic problem, and a stem-cell rather than a somatic-cell disease. We reveal that the incredible resemblance between a cancer cell and a stem cell suggests that they are intimately related. The uncanny ingenuity of a cancer cell is also innate in a stem cell. The recognition that cancer has a stem-cell origin indicates that a stem-cell theory of cancer may be the unified theory that we need to make sense of the torrents of new data and new insights into different facets of cancer, to see how they fit together into one picture, and to disarm the disease. A stem-cell theory of cancer can potentially accept, embrace, and integrate all of its genetic, epigenetic, proteomic, and metabolic aspects. Such a unified theory can account for all cancer hallmarks, including metastasis, heterogeneity, dormancy, and immune evasion. It predicts that multimodal therapy may be more beneficial than targeted therapy, and integrated medicine more effective than precision medicine for the management of all but the simplest tumors. It predicts that when we have the correct cancer theory, clinical progress will advance by monumental leaps rather than incremental steps. Indeed, I predict that successful clinical outcomes will ultimately provide irrefutable validation that cancer is a stem-cell disease. Therefore, the thesis of this book is actually quite simple. When we have a pertinent and correct theory of the origin of cancer, all ideas, observations, experiments, and treatments will begin to fall into place and make perfect sense. We would like to convince readers that a stem-cell theory is the elusive, long-sought unified theory, the theory of all theories, of cancer.
**OPHTHALMOLOGY**

*The Optic Nerve: Structure, Functions and Clinical Aspects*

*Theodore Thomas*

In series: *Eye and Vision Research Developments*

Softcover: 978-1-53614-381-2. $82.00.
e-book: 978-1-53615-544-0. $82.00.

In the opening chapter, the authors focus on the current understanding of mechanisms regulating retinotopic axonal projection within the retina, optic nerve, and optic chiasm during visual system development. The second chapter discusses the histopathologic features of meningiomas arising in the optic nerve sheath. The closing chapter intends to analyze evidence supporting the neuroprotective effect of two different strategies: the exposure to enriched environments and a treatment with melatonin, a very safe compound for human use.

**ORTHOPEDICS**

*In Pursuit of Socket Harmony: Optimizing the Transtibial Socket Interface*

*Glenn M. Street, PhD, Carl A. Caspers, CPO, Kyle B. Miller, MS and Benjamin C. Noonan, MD*

In series: *Physical Medicine and Rehabilitation*

Hardcover: 978-1-53615-141-1. $175.00.

Since the advent of the first modern below-knee prosthesis (joint and lacer) in 1696, the world has seen unprecedented advances in virtually every facet of medical science, yet limb discomfort, pain, and soft tissue breakdown remain a way of life for roughly half of today’s ambulatory, below-knee (transtibial) amputees. These largely avoidable daily struggles are traceable to poorly crafted limbs, ill-designed prostheses, and/or inadequate upkeep of them. Fortunately, the solution to the majority of these struggles is clear-cut and entirely achievable. Primarily, it requires a team effort by surgeons, prosthetists, and amputees: as each has a unique role to play. Surgeons must employ the latest surgical principles to optimize the limb for prosthetic use (Chapter 2), prosthetists must implement the latest design principles to create a responsive, comfortable, and pain-free socket interface (Chapter 4), and amputees must follow the guidelines to maintain their optimized limb and prosthesis (Chapter 5). However, as discussed in Chapter 2, certainty of a pain-free interface will also require a commitment by researchers to find solutions to the yet unresolved surgical issues (e.g. neuromas and bone spurs). While one can never expect the socket interface to perfectly replace the responsive and pain-free connection lost during amputation, finding solutions to the unresolved surgical issues, and following the latest principles and guidelines discussed in this book unquestionably offers transtibial amputees with their best chance of achieving the active, comfortable, pain-free, and productive lifestyle they deserve.

**OTOLARYNGOLOGY**

*Advances in Audiology Research*

*Victor M. Kristensen*

In series: *Audiology and Hearing Research Advances*

Softcover: 978-1-53615-260-9. $95.00.

Genes causing hearing loss display various modes of inheritance, with autosomal recessive being the most common. With so many cases of hearing loss having a genetic etiology, audiologists are certain to encounter these patients on a fairly regular basis. Audiologists who possess basic knowledge about genetics are better equipped to recognize when a genetics referral is warranted, thereby enhancing patient care. In this chapter, it is determined that a genetics evaluation can yield valuable information for patients and their families, such as prognosis, estimates of recurrence risks, and diagnosis of other family members. The second chapter will review causes of revision surgery, how to diagnose cases of failed cochlear implants and will discuss surgical and audiological outcome of revision cochlear implant surgeries, Speech recognition
ability with a replacement cochlear implant may significantly increase or decrease from that with the original implant. Experienced cochlear implant patients facing reimplantation must be counseled regarding the possibility of differences in sound quality and speech recognition performance with their replacement device. The purpose of the following chapter is to correlate the results obtained through questionnaires concerning self-reported restriction in social participation and patient satisfaction / benefit with objective time assessment of device use. This is a descriptive, cross-sectional study sample composed of and elderly and non-elderly adults of both sexes diagnosed with hearing loss and approved as candidates for hearing aid fitting at a university hospital. The goal of chapter four is to understand the main features of human posture and how it is possible to analyze it. The aim of this chapter is to investigate the influence of hearing loss and vestibular disorders on body posture. The objective of the concluding chapter was to analyze the auditory brainstem response (ABR) and frequency following response (FFR) in patients diagnosed with Sickle Cell Disease (SCD) who were referred to the outpatient hemoglobinopathy clinic at a public hospital in southern Brazil.

Crush Otolaryngology Boards. Volume 1
Mohamad R. Chaaban, M.D. (University of Texas Medical Branch, League City, TX, US)
In series: Otolaryngology Research Advances
Hardcover: 978-1-53614-781-0. $230.00.
This book is intended as a study guide for students, residents and practicing otolaryngologists. The book style is in bullet points and tables to highlight high yield information that can be used while preparing for the exam. Volume One includes five sections: General Otolaryngology – topics related to pharmacology, radiology, anesthesia, pathology, fluids and electrolytes; Sleep Medicine – topics related to sleep medicine and surgery for obstructive sleep apnea; Pediatric Otolaryngology – topics related to pediatric rhinology, otology, cleft palate and lip, and head and neck vascular malformation; Laryngology – topics related to benign and malignant laryngeal lesions, voice disorders, and dysphagia; and Rhinology – topics related to sinonasal benign and malignant sinonasal lesions, allergic rhinitis, chronic sinusitis diagnosis and management, and anterior skull base pathologies.

Crush Otolaryngology Boards. Volume 2
Mohamad R. Chaaban, M.D. (University of Texas Medical Branch, League City, TX, US)
In series: Otolaryngology Research Advances
Hardcover: 978-1-53614-801-5. $230.00.
This book is intended as a study guide for students, residents and practicing otolaryngologists. This book’s style is in bullet points and tables to highlight high yield information that can be used while preparing for an exam. Volume Two includes the following sections: Otolgy – topics related to audiology, benign and malignant otologic lesions, conductive and sensorineural hearing loss, facial nerve paralysis, diagnosis and management of vestibular disorders; Facial Plastics and Reconstructive Surgery – topics related to facial analysis, blepharoplasty, brow lift, rhinoplasty, rhytidectomy, local and free flaps for reconstruction, mentoplasty and chin augmentation; and Head and Neck Cancer – topics related to chemotherapy and radiation for head and neck cancer, diagnosis and management of cancers of the oral cavity, oropharynx, nasopharynx, salivary gland, head and neck lesions, thyroid and parathyroid pathologies, and tumors and cysts of the jaw.

Ototoxicity: Signs, Symptoms and Treatment
Gregg Colon
In series: Otolaryngology Research Advances
Softcover: 978-1-53616-396-4. $95.00.
This compilation focuses on ototoxicity, the adverse pharmacological reaction affecting the inner ear or auditory nerve, characterized by cochlear or vestibular dysfunction. Although ototoxic medications play an essential role in modern medicine, they can cause harm and lead to significant morbidity. The authors discuss aminoglycoside antibiotics, loop diuretics, platinum-based chemotherapeutic agents, macrolide antibiotics and antimalarial medications which are among the 600 frequently used ototoxic drugs. Next, an overview of cisplatin-associated ototoxicity, namely its clinical features, incidence rates, molecular and cellular mechanisms and risk factors is provided for health care practitioners managing patients with cancer. Ototoxicity and neurotoxicity are defined from the perspective of chemical agents, nicotine and...
cotinine, that individuals experience through cigarette smoking and environmental tobacco smoke exposure. Mechanisms for toxicity are described by review of animal and human studies revealing changes in peripheral and central auditory structures after exposure to nicotine. The mechanisms of ototoxicity induced by aminoglycoside are also discussed, as well as the usage of these drugs for treatment of several disorders such as Meniere disease, and possible protective agents. In closing, the authors highlight the serious issue of aminoglycoside mediated hearing loss in cystic fibrosis patients, and also discuss alternative approaches for avoiding aminoglycoside-induced cochleotoxicity.

Sensorineural Hearing Loss: Pathophysiology, Diagnosis and Treatment
Francesco Dispenza, M.D., Ph.D. (AOUP P. Giaccone Hospital, Palermo, Italy and Bio.Ne.C. Department, University of Palermo, Palermo, Italy and Istituto Euro-Mediterraneo della Scienza e Tecnologia (I.E.ME.S.T.), Palermo, Italy) and Francesco Martines, M.D., Ph.D. (Bio.Ne.C. Department, University of Palermo, Palermo, Italy. and Istituto Euro-Mediterraneo della Scienza e Tecnologia (I.E.ME.S.T.), Palermo, Italy)
In series: Otolaryngology Research Advances
e-book: 978-1-53615-049-0. $230.00.
Hearing loss is one the commonest disabling diseases affecting populations of all ages worldwide. The impairment of hearing may be the cause of impaired language development in children, the cause of scholarly issues in adolescents, the cause of worsening of quality of life in the adults, and the cause of isolation of aged people. In this book, the authors present the hearing loss in all its facets, starting from the basis of pathophysiology and anatomy, passing through the clinical and instrumental diagnosis and, finally, describing the most important diseases causing hearing loss with reasonable treatment options. A section was dedicated to the imaging of the ear with about 100 original figures. The readers will find a complete classification of genetic hearing loss and all information related to congenital deafness as well. A wide section was reserved to the description and discussion of the most important pathology leading to hearing loss (Meniere’s disease, otosclerosis, trauma and occupational hearing impairment, etc.). The treatment of hearing loss is continuously evolving with the progress of technology, and the authors gave a wide space to describe all treatment options available for the patients, providing all information useful to manage hearing disease correctly.

PAIN MANAGEMENT

Behavioral Study of Agonist-Evoked Activation of Transient Receptor Potential Channels
Merab G. Tsagareli, PhD (Beritashvili Center for Experimental Biomedicine, Head, Department of Pain and Analgesia, Georgia)
In series: Pain Management - Research and Technology
2020.
Softcover: 978-1-53616-501-2. $95.00.
This book provides an original account of behavioral aspects with important ramifications for the study of transient receptor potential (TRP) channels functioning. It explains, in terms of specified somato-sensory mechanisms and systems, how TRP channels work. Through exploration of animal models by testing paw withdrawal reflexes to thermal and mechanical stimuli, it is shown that TRP channels are promising targets for the development of a new group of analgesic drugs at the periphery and central levels and opportunities for therapeutic intervention.
An Outline of Office-Based Bladder and Prostate Biopsy Pathology

David Y. Zhang, M.D., Ph.D. (Pathology and Laboratory Medicine Service, The Department of Veterans Affairs New York Harbor Healthcare System, New York, NY)

In series: Pathology and Laboratory Medicine


This book is intended for urologists and pathologists who practice in an office setting. In this setting, bladder and prostate diseases are most commonly encountered. Therefore, bladder and prostate biopsy and urine cytology specimens are frequently obtained by urologists, which require pathologists’ assistance to interpret. In the office setting, communication between urologists and pathologists becomes feasible, which is paramount for accurate diagnosis and better patient management. For this purpose, this book includes clinically relevant information for pathologists, concise pathology terminology, and diagnostic tests for urologists. This book describes the common clinical and pathological entities, and is written in a bullet format for easy and quick reference. For visual review, over 150 diagrams, histologic images, and other images are included. The first and second chapters describe bladder and prostate diseases, focusing on clinical-pathological correlation. Therefore, this book is also useful for pathology and urology residents in training, in preparation for board examination(s), or as a refresher reference for recertification. The third chapter is dedicated to office-based pathology laboratory services, which outlines laboratory instrumentation, procedures, and regulatory requirements. This information is useful for urologists and pathologists who are involved in the management of an office-based pathology laboratory. Finally, I greatly appreciate Josephine Wu DDS, Esq. and Miao Cui MD, MS, who contributed to this excellent third chapter.

Clinical Flow Cytometry: Approaches, Principles, and Applications

Jason Kurzer, M.D., Ph.D (Director of Clinical Hematology Laboratory, Department of Pathology, Stanford University School of Medicine, Stanford, California, USA) and Olga Kagan Weinberg, M.D. (Director of Hematopathology and Flow Cytometry, Department of Pathology, Boston Children’s Hospital, Boston, Massachusetts, USA)

In series: Pathology and Laboratory Medicine

Hardcover: 978-1-53614-643-1. $230.00.

This book is a focused review of clinical flow cytometry, and is meant to be helpful in daily clinical practice for those just beginning to learn flow cytometry as well as those with years of experience. Covering the basic principles of flow cytometry, and then engaging in detailed reviews of the flow cytometric evaluation of B-cells, plasma cells, T-cells, and myeloid cells, it packs a wide variety of immunophenotypic data into one volume. Moreover, this book covers both normal and abnormal findings for each lineage, and highlights key pitfalls to avoid making diagnostic mistakes. Many of the most common neoplastic entities are reviewed, and signature findings are highlighted. Using the updated nomenclature for clinical hematologic malignancies provided by the revised 4th edition of the WHO classification system, the book is current in its approach and content. Whenever possible, detailed colored examples of flow cytometric plots are provided to help convey the important diagnostic findings. Most importantly, a review of current applications of flow cytometry in minimal residual disease is provided to assist in both the development and interpretation of these assays. Written by experts in the field, the result is a practical resource for use as an everyday clinical reference.
Pediatrics

**Chronic Disease and Disability: Pediatric Obesity Perspectives**

Marisha Agana (Department of Pediatric and Adolescent Medicine, Western Michigan University Homer Stryker MD School of Medicine, Kalamazoo, MI), Donald E. Greydanus (Department of Pediatric and Adolescent Medicine, Western Michigan University School of Medicine, Kalamazoo, MI, USA), Manmohan K. Kamboj (Section of Endocrinology, Nationwide Children’s Hospital at The Ohio State University, Columbus, Ohio, USA), Joav Merrick, MD, MMedSci, DMSc, (Division of Adolescent Medicine, KY Children’s Hospital, Department of Pediatrics, Lexington, Kentucky, USA; National Institute of Child Health and Human Development, Jerusalem, Israel; Division of Pediatrics, Hadassah Hebrew University Medical Centers, Mt Scopus Campus, Jerusalem, Israel; School of Public Health, Georgia State University, Atlanta, Georgia, USA)

In series: Pediatrics, Child and Adolescent Health

Edited by: Joav Merrick (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)


Hardcover: 978-1-53615-240-1. $230.00.


Pediatric obesity has become an epidemic of seemingly unsurmountable proportions. This book provides perspectives on pediatric obesity for health care providers with such important topics as etiology, prevalence, diagnosis and management. Various complications and co-morbidities of obesity are also explored. The editors thank our many outstanding contributors from different parts of the United States and the world for their invaluable help in this publication. We hope that our readers will find this book useful as the health care profession and society in general seek to improve this serious epidemic as the 21st century continues.

**Pediatric Critical Care: A Primer for All Clinicians**

Jason M. Kane, MD MS, Associate Professor of Pediatrics, University of Chicago, Comer Children’s Hospital, Interim Chief, Section of Pediatric Critical Care, Director of Quality and Outcomes, Pediatric ICU, Chicago, IL, US, Rachel Wolfson, M.D., Associate Professor of Pediatrics, University of Chicago, Comer Children’s Hospital, Pediatric Critical Care Medicine, Pritzker School of Medicine, University of Chicago Medical Center, Chicago, IL, US, Stuart Berger, M.D., Vice Chair for Clinical Affairs, Department of Pediatrics, Chief of Cardiology in the Department of Pediatrics, Professor of Pediatrics, Feinberg School of Medicine, Northwestern University, Chicago, IL, US and Joseph R. Hageman, M.D., Director NICU Quality Improvement, Comer Children’s Hospital, Senior Clinician Educator, Pritzker School of Medicine, University of Chicago, Chicago, IL, US

In series: Emergency and Intensive Care Medicine


Hardcover: 978-1-53614-837-4. $310.00.


Pediatric critical care is an emotionally and intellectually demanding field of medicine; however, it is at its core the discipline focused on saving and improving the lives of children affected by acute and chronic illnesses, injuries, and toxicities. The heart of any successful pediatric critical care program is the multidisciplinary and interdisciplinary care provided by pediatric intensivists and their team of specialized co-workers including pediatric critical care nurses, respiratory therapists, pharmacists, social workers, and nutritionists working in concert with the pediatric ICU (PICU). It is
this interplay between clinical specialists that ensures children are afforded cutting-edge, technologically complex, holistic, and age-appropriate care, while at the same time ensuring that the needs of both the child and the family are addressed. Additionally, critical care medicine encompasses the extremes of all pediatric medicine and as such those charged with caring for children in the PICU must be well versed in all areas of pediatric medicine, as well as prepared for any contingency or emergency. Caring for sick children both within and outside of the pediatric intensive care unit (PICU) requires an understanding of how pediatric physiology differs from that of adults. Recognizing a deteriorating child and stabilizing that patient rapidly is a requisite skill that every clinician charged with caring for children must master. This practical handbook is written for all clinicians who care for children with acute illness, and who may need to assess and stabilize a deteriorating child before transfer to the PICU. Specifically, chapters provide helpful insights for all levels of pediatric providers including pediatric critical care and general care nurses, advanced practice nurses, medical students, pediatric residents, residents from other disciplines who rotate through PICU, pediatric hospitalists, and emergency physicians who care for children. In addition to covering PICU-specific topics such as mechanical ventilation and procedural sedation, this handbook also includes guidance in the initial resuscitation, management and stabilization of children with impending critical illness or those at risk for acute deterioration. Management of life-threatening situations that are specifically included in this book include respiratory failure, cardiovascular failure, electrolyte derangements, diabetic ketoacidosis, burn injuries, status epilepticus, status asthmaticus, toxic ingestions, and sepsis, among many others.

Substance Use Disorders in Adolescents and Young Adults: A Manual for Pediatric and Primary Care Clinicians. Second Edition

Donald E. Greydanus, MD (Department of Pediatric and Adolescent Medicine, Western Michigan University School of Medicine, Kalamazoo, MI, USA), Gabriel Kaplan, MD (Clinical Associate Professor of Psychiatry at Rutgers New Jersey Medical School, Newark, New Jersey and Behavioral Health Network, RWJBarnabas Health, West Orange, New Jersey), Dilip R. Patel, MD (Department of Pediatric and Adolescent Medicine, Western Michigan University Homer Stryker MD School of Medicine, Kalamazoo, Michigan, USA), and Joav Merrick, MD, MMedSci, DMSc (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel; Division of Adolescent Medicine, KY Children’s Hospital, Department of Pediatrics, Lexington, Kentucky, USA; National Institute of Child Health and Human Development, Jerusalem, Israel; Division of Pediatrics, Hadassah Hebrew University Medical Centers, Mt Scopus Campus, Jerusalem, Israel; School of Public Health, Georgia State University, Atlanta, Georgia, USA)

In series: Pediatrics, child and adolescent health

Edited by: Joav Merrick (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel) 2019. 422 pp.

Hardcover: 978-1-53615-359-0. $230.00.


This updated and revised second edition on substance abuse in adolescents and young adults provides information on this global public health topic. We cover a wide variety of subjects within the paradigm of drug abuse and agree with the 21st century message of integrating substance abuse management with primary care services. The editors thank the many experts who so graciously and lambently provided their time and knowledge in these areas. The editors hope that the readers of this treatise find useful and beneficial information that will help them in their work seeking to understand and ameliorate the negative effects of these plants of paradise and of other chemicals that are part of the drug addiction pharmacopoeia of the 21st century. The science of this field continues to evolve and this edition looks at a wide variety of concepts in this regard—including neurobiology, genetics, the role of the primary care clinicians, the US opioid epidemic, and psychosocial management. Specific drugs of abuse include tobacco, cannabis, alcohol, opioids, prescription drugs, illicit stimulant drug abuse, hallucinogens, and date rape drugs. We also look at concepts related to prenatal drug exposure, substance abuse in adolescent females, co-occurring substance use with psychiatric disorders, prescription stimulant abuse in college students, and performance enhancing drugs in sports. We conclude with a consideration of new drugs of abuse in the 21st century, the societal burden of substance abuse, and the pros as well as cons of drug legalization.
Advances in Medicinal Chemistry Research

Édeildo Ferreira da Silva Júnior (Laboratory of Medicinal Chemistry, Federal University of Alagoas, Maceió, Brazil; Chemistry and Biotechnology Institute)

In series: New Developments in Medical Research

2019.

Hardcover: 978-1-53616-368-1. $195.00.

Advances in Medicinal Chemistry Research is a book addressed to undergraduate and postgraduate students, where recent advances in the discovery and development of effective agents against the most remarkable wide-reaching diseases are presented, divided into seven chapters. This first edition of Advances in Medicinal Chemistry Research offers insights into medicinal chemistry that arguably have the most significant impact on our lives than any other. It draws together research on therapeutic agents from natural, synthetic, and virtual screening sources as starting points for the design of drugs against obesity, multidrug-resistant bacteria, neglected tropical diseases, Alzheimer, and cancer. From the prediction of promising hits and identification of active compounds to the extraction of more complex molecules, this book explores a range of essential topics to support the development of novel, economical, and efficacious therapeutics for these diseases, which currently affect a billion people worldwide. Beginning with an overview of obesity, showing the current research landscape, the books shows the importance of natural and synthetic products as promising anti-obesity agents. Subsequently, the medicinal chemistry of modulation of bacterial resistance is presented, focusing on the MFS, RND, ABC, and MATE superfamilies. The book goes on to discuss such topics as antituberculosis, antileishmanial, and anti-hepatitis thiophene-containing compounds, under the medicinal chemistry point of view. Also, potent human glutaminyl cyclase inhibitors are deeply discussed and displayed as hopeful anti-Alzheimer’s agents. The last three chapters are focused on the development of researches involving new anticancer agents, initializing with LBDD, SBDD, QSAR, and QM/MM methods applied to the identification of novel promising anticancer compounds. Moreover, INDO 1 inhibitors are exhaustively explored and analyzed as a new promise for the immunotherapy of cancer. Finally, a great update on Eg5 kinesin inhibitors is provided, exploring different chemical classes of synthetic natural compounds, including miscellanea as a new approach for Eg5 inhibition. Combining the expertise of researchers from around the world, this volume aims to support and encourage researches for the development of novel, safe, and active agents against lipase enzyme, bacteria, neglected tropical diseases, Alzheimer, and cancer. The clear narrative truly engages the reader, holding their attention right from the opening of a chapter, and maintaining interest and understanding as a chapter leads into more complex material. Advances in Medicinal Chemistry Research is a book that reviews ongoing developments and recent cutting-edge advances in medicinal chemistry of the most relevant diseases and nowadays, underlining how medicinal chemistry research continues to make significant contributions to the discovery and development of new therapeutic entities. Key Features • Chapters written by active specialists and leading experts deeply engaged in the research field of most deadly and limiting diseases for drug discovery. • Draws together cutting-edge research advances in medicinal chemistry focused at the obesity, multidrug-resistant microorganisms, Alzheimer, and cancer in a single volume. • Highlights the future potential of researches for the medicinal chemistry of most impactful diseases today. • Contents addressed to medicinal chemistry, biochemistry, biology, and pharmacy students, professors, and researchers.

Comprehensive MCQs in Pharmacology

Sahab Uddin, MD (Department of Pharmacy, Southeast University, Dhaka, Bangladesh), and Shah Amran, MD (Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Dhaka, Dhaka, Bangladesh)

In series: Pharmacology - Research, Safety Testing and Regulation

2019.

Hardcover: 978-1-53616-298-1. $345.00.

Pharmacology is the study of substances that interact with living systems through chemical processes, especially by binding to regulatory molecules and activating or inhibiting normal body processes. If substances have medicinal properties, they are considered drugs or pharmaceuticals. The field encompasses drug composition and properties, interactions, toxicology, therapy, and medical applications and antipathogenic capabilities. Pharmacology lies at the heart of biomedical science, linking together pharmaceutical chemistry, physiology, and pathology. Comprehensive MCQs in Pharmacology represents copious multiple choice questions, which can be used to assess essential pharmacology knowledge that equips pharmacists with exclusive perceptions and acumen in the provision of pharmaceutical care. It also provides a brief account of recent perspectives in drug research, as either a study or high-yield revision aid. This book is suitable for professionals, academicians, students, researchers, scientists and industrialists around the world in the fields of pharmacology and pharmaceutical sciences. Furthermore, for pharmacy preregistration examination candidates and for practicing pharmacists, this book is a storehouse of knowledge. The organization of this book provided a profound knowledge and also maintains the reader’s interest.
Physical pharmacy is the study of the physical and chemical properties of drugs and their dosage forms. It attempts to integrate the factual knowledge of pharmacy through the development of its principles, and it assisted the pharmacist and the pharmaceutical scientist in their effort to foresee the solubility, stability, compatibility, and biologic action of drug products. Furthermore, this field has become even more highly incorporated into the biomedical aspects of the practice of pharmacy. Comprehensive MCQs in Physical Pharmacy represents copious multiple choice questions, which can be used to assess essential physical pharmacy knowledge that equips pharmacists with exclusive perceptions and acumen in the provision of pharmaceutical care. It also provides a brief account of pharmaceutical developments, as either a study or high-yield revision aid. This book is suitable for professionals, academicians, students, researchers, scientists and industrialists around the world in the fields of physical pharmacy and pharmaceutical sciences. Furthermore, for pharmacy preregistration examination candidates and for practicing pharmacists, this book is a storehouse of knowledge. The organization of this book provided a profound knowledge and also maintains the reader’s interest.

Diclofenac: Pharmacology, Uses and Adverse Effects
Eugenia Yiannakopoulou (Department of Medical Laboratories, Faculty of Health and Caring Professions, Highest Technological Educational Institute of Athens, Athens, Greece)
In series: Pharmacology - Research, Safety Testing and Regulation
2019.
Softcover: 978-1-53616-321-6. $95.00.
Although the non steroidal anti-inflammatory agent diclofenac is an old drug, there is ongoing research interest on potential novel indications of the drug, on adverse drug reactions of diclofenac and on the management of these adverse drug reactions. This book aims to contribute knowledge on novel aspects of the pharmacology of diclofenac. Thus, the book provides evidence on three fields: (i) potential novel indications of diclofenac, especially in oncology, (ii) adverse events of diclofenac and (iii) modulation of gastrointestinal and cardiovascular toxicity of diclofenac. The book titled ‘Diclofenac: Pharmacology, Uses and Adverse Events’ is focused on the above areas, contributing evidence on: • the anticancer effects of diclofenac, • the modulation of stress response by diclofenac, • rare severe adverse reactions of diclofenac, • thyroid effects of diclofenac, • maternal and fetal adverse reactions of diclofenac and • the modulation of gastrointestinal • the modulation of cardiovascular toxicity of diclofenac. All the chapters are well-written and structured and appropriately referenced. The authors present their own research work and at the same time they provide a well-informed literature review. The book will be interesting for researchers with interest in diclofenac, academic teachers, medical doctors, pharmacologists, pharmacists, and medical students.

The Pharmacological Guide to Montelukast
Søren C. Dam
In series: Pharmacology - Research, Safety Testing and Regulation
2019.
Softcover: 978-1-53616-394-0. $82.00.
e-book: 978-1-53616-395-7. $82.00.
The Pharmacological Guide to Montelukast opens by presenting the most recent updates on the improvement of montelukast stability and bioavailability, along with some innovative formulations produced by this research. Montelukast is a leukotriene modifier with bronchoprotective and anti-inflammatory actions frequently used in asthma management. As such, the authors go on to assess the impact of the addition of montelukast to ongoing asthma treatment in terms of improvement in clinical parameters, symptom control and quality of life. The closing chapter focuses on leukotrienes, formed by leukocytes, which are inflammatory mediators that play an active role in early and late-phase immune response. This group includes montelukast, zafirlukast and pranlukast.
The Pharmacological Guide to Sofosbuvir
Vijay Gayam, MD (American University of Antigua, Antigua)
In series: Pharmacology - Research, Safety Testing and Regulation
2020.
Softcover: 978-1-53616-476-3. $95.00.
e-book: 978-1-53616-477-0. $95.00.
Chronic hepatitis C infection (HCV) has been a global health burden since its discovery in 1989. This book “The Pharmacologic Guide to Sofosbuvir” is the integrated reference book for all clinicians, researchers, and students dealing with HCV infection. Sofosbuvir is a backbone for the majority of direct-acting antivirals (DAA) combination regimens for all HCV Genotypes infected patients. This is the first book that offers a concise and up-to-date review on Sofosbuvir including pharmacological profile and difficult-to-treat-specific populations such as cirrhotic patients, HCV Co-infection (HIV and/or hepatitis B infection), renal impairment, renal and liver transplant, hepatocellular cancer, previous treatment failure, psychiatric illness, and substance abuse. The book also addresses evolving therapy, and future directions in the antiviral treatment of hepatitis C. Clinicians, residents, students, and physician assistants who like a prompt review of hepatitis C treatment and new developments in treatment for hepatitis C will receive the greatest advantage from this concise guide. Based on promising results from the previous and ongoing studies involving sofosbuvir; HCV will likely be the first chronic viral infection to be eradicated globally with combinations of DAA. The authors, editors, and publishers have exerted every effort to ensure that drug selections and dosage outlined in this text are per current recommendations for hepatitis C treatment and practice at the time of publication.

**Building Youth for the Future: Suicide Prevention Aspects**
Hatim A. Omar, MD (Division of Adolescent Medicine, KY Children’s Hospital, Department of Pediatrics, Lexington, Kentucky, US), and Joav Merrick, MD, MMedSci, DMSc (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel; Division of Adolescent Medicine, KY Children’s Hospital, Department of Pediatrics, Lexington, Kentucky, US; National Institute of Child Health and Human Development, Jerusalem, Israel; Division of Pediatrics, Hadassah Hebrew University Medical Centers, Mt Scopus Campus, Jerusalem, Israel; School of Public Health, Georgia State University, Atlanta, Georgia, US)
In series: Pediatrics, Child and Adolescent Health
Edited by: Joav Merrick (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
2020.
Softcover: 978-1-53616-564-7. $82.00.
e-book: 978-1-53616-565-4. $82.00.
This book is really a reflection of the past more than 20 years of work with teens and suicide prevention in the state of Kentucky. The work to establish the “Stop Youth Suicide Campaign (SYS)” has resulted in contact with many young adults, and we have found that the most important thing for all of them was finding a caring person they trust and can talk to. Because of the constant need, the SYS went from a goal of being a one year awareness campaign to becoming a major community resource, working with the state and local governments and state legislators to add as many resources as possible. We have witnessed for the first time a drop of youth suicide rates below the national average, according to the 2013 Youth Risk Behavior Surveillance done biannually by the Center for Disease Control. In this book, we will tackle various topics and specific populations in relation to suicide written by people who work with teens and care about them. Professor Hatim A Omar, MD, FAAP, is professor of pediatrics and obstetrics/gynecology, Children’s Miracle Network Chair, Division of Adolescent Medicine and Young Parents Program, Kentucky Children’s Hospital, UK Healthcare, Department of Pediatrics, University of Kentucky College of Medicine, Lexington, Kentucky, United States. Joav Merrick, MD, MMedSci, DMSc, born and educated in Denmark is professor of pediatrics at the Division of Pediatrics, Hadassah Hebrew University Medical Center, Mt Scopus Campus, Jerusalem, Israel, Kentucky Children’s Hospital, University of Kentucky, Lexington, United States and professor of public health at the Center for Healthy Development, School of Public Health, Georgia State University, Atlanta, United States, the former medical director of the Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem and the founder and director of the National Institute of Child Health and Human Development in Israel.
Focus on Mental Health and Illness

Isaac Banks

In series: Mental Illnesses and Treatments
Hardcover: 978-1-53615-081-0. $230.00.

According to the Mental Health Services Administration, about one in five adults had a mental health condition in the past year. That’s nearly 10 million adults with illnesses such as schizophrenia, bipolar disorder, or depression that interferes with a major life activity. Chapter 1 focuses on mental health issues in America and the role the Medicaid and Medicare programs play in addressing the needs of those with behavioral and mental health issues. Chapter 2 offers recommendations on how to address the mental health crisis. Chapter 3 presents prevalence estimates of any mental illness and serious mental illness based on surveys and ends with a brief discussion of how these prevalence estimates might inform policy discussions. People with mental illness comprise a significant proportion of the population involved with the criminal justice system. Mental health courts were developed to respond to the large number of people in the criminal justice systems with mental illness as described in Chapter 4. Law enforcement encounters with individuals with mental illness may require special training and skills and can sometimes involve volatile situations, risking tragic injuries or even death as reported in Chapter 5. The Federal Bureau of Prisons (BOP) is responsible for confining offenders in environments that are safe, humane, cost-efficient, and appropriately secure. To do so, the BOP utilizes various forms of Restrictive Housing Unit (RHU) to confine certain inmates, including those with mental illness. However, according to chapter 6, confinement in RHUs, even for relatively short periods of time, can adversely affect inmates’ mental health and can be particularly harmful for inmates with mental illness.

Fundamentals of Consultation Liaison Psychiatry: Neuropsychiatry

Mallika Lavakumar, MD (Assistant Professor, Case Western Reserve University, Cleveland, OH, US), Lisa J. Rosenthal, MD (Associate Professor, Associate Vice Chair for Clinical Affairs, Department of Psychiatry and Behavioral Sciences, Northwestern University Feinberg School of Medicine, US), and Terry Rabinowitz, MD (Professor of Psychiatry and Family Medicine, Larner College of Medicine at the University of Vermont; Director, Psychiatry Consultation Service, University of Vermont Medical Center, Burlington, VT, US)

In series: Psychiatry - Theory, Applications and Treatments

Emotionality, Intimacy and Trauma of Intellectually Disabled Clients with Self Harm, Aggression, Disturbing Behaviors and/or Emotional Fluctuation (SADE): Humanistic Interpretation and Intervention

Kam-shing Yip (Research Professor, Caritas Institute of Higher Education, Tseung Kwan O, Hong Kong)

In series: Psychiatry - Theory, Applications and Treatments
2019.
Softcover: 978-1-53615-280-7. $95.00.
e-book: 978-1-53615-281-4. $95.00.

Intellectual disabilities have long been a concern for both practitioners and academics alike. With the introduction and advocacy of concepts to the public in recent decades, and the normalization and valorization of intellectual disabilities, humanistic concern has become the dominant trend in providing interventions and services for people with these issues. Today, various ideas for societal inclusion of those with intellectual disabilities have been introduced. However, many practitioners and academics have criticized these ideas as idealistic, and in many ways, inapplicable for actual social inclusion of people with intellectual disabilities. The situation is particularly serious regarding those intellectually disabled individuals presenting various forms of self-harm, aggression, disturbing behaviors, and emotional fluctuation (SADE: S =Self harm, A = Aggression, D = Disturbing behaviors, E = Emotional fluctuation). In many instances, social exclusion, labelling, punishments, deprivation of rights, physical restraints, as well as psychiatric medications are commonly used in controlling intellectual disabled clients with SADE. A thorough understanding of intellectually disabled clients has revealed that their self-harm, aggression, disturbing behaviors, and emotional fluctuations (SADE) are closely related to their unfulfilled needs, developmental traumas, abuse, neglect, and abandonment in their lives. These individuals have problems in expressing their views and emotions, as well as having severe attachment needs. Based on the writers’ substantial experience, clinical practice, and supervision in working with intellectual disabled clients with SADE, this book is the first to formulate and consolidate the communication, emotionality, intimacy, and trauma based interpretation and intervention for intellectually disabled clients with SADE. This book provides methods for effective, humanistic, normalized, and integrated recovery of these individuals.
Many patients admitted to a general hospital may have one or more coexisting psychiatric conditions that require attention to facilitate their recovery. When called to assess and recommend treatment, the psychiatry consultant may discover they are dealing with a disorder that, although at first was thought to be psychiatric, is very likely the manifestation or consequence of a condition that has psychiatric and neurologic components. More important, the presenting signs and symptoms may require a comprehensive and learned neurological evaluation. The editors of Fundamentals of Consultation Liaison Psychiatry: Neuropsychiatry have encountered perplexing cases at the interface of psychiatry and neurology and finding the resources to help guide and inform their assessments was not easy. Fundamentals of Consultation Liaison Psychiatry: Neuropsychiatry was born as a response to these challenges; as a contribution to all psychiatric consultants who seek to improve their neurological assessment skills, and those who want to better understand the conditions, nuances, and complexities defined by neuropsychiatry. This book will be a useful addition to any CL psychiatrist’s library; it will be equally helpful for Consultation Liaison Psychiatry fellows, Psychiatry residents, general Psychiatrists who are interested in CL Psychiatry or who perform psychiatric consultations from time to time, medical students on their CL Psychiatry clerkships, and psychiatric nurse practitioners. This book comprises eight chapters written by recognized experts in psychiatry, psychology, neurology, and anesthesiology. The first chapter, Neurocognitive and Neurological Examination, provides an especially detailed discussion and explanation of this topic in a highly readable and accessible format. An entire chapter, Neurological Conditions, provides state-of-the-art discourse about common neurological conditions including cerebrovascular diseases, epilepsy and related disorders (including nonepileptic seizures), movement disorders, and data about less common but equally important conditions such as lupus cerebritis, multiple sclerosis, and prion diseases. The chapter, Cerebrovascular and Malignant Syndromes, elaborately describes these conditions from the CL consultant’s perspective: as syndromes with motor manifestations that have potentially life-threatening consequences, and discusses their epidemiology, risk factors, clinical presentation, pathophysiology, diagnosis, and management. Another chapter, Electroconvulsive Therapy and Other Related Therapies, discusses the use and potential life-saving benefits of ECT for critically ill medical patients. The book contains more than 30 tables. Each chapter includes five multiple choice study questions with annotated answers. As a stand-alone reference, this book will fill the gap in many CL consultants’ libraries where a neuropsychiatry text targeting non-neurologists should reside. When paired with its sister text, Fundamentals of Consultation Liaison Psychiatry: Principles and Practice, these two volumes will empower readers to more precisely and comprehensively assess and treat medical or surgical patients suffering with one or more psychiatric conditions that may be adversely affecting their health and recovery.

**Fundamentals of Consultation Liaison Psychiatry: Principles and Practice**

**Mallika Lavakumar, MD (Assistant Professor, Case Western Reserve University, Cleveland, OH, US), Lisa J. Rosenthal, MD (Associate Professor, Associate Vice Chair for Clinical Affairs, Department of Psychiatry and Behavioral Sciences, Northwestern University Feinberg School of Medicine, US), and Terry Rabinowitz, MD (Professor of Psychiatry and Family Medicine, Larner College of Medicine at the University of Vermont; Director, Psychiatry Consultation Service, University of Vermont Medical Center, Burlington, VT, US)**

In series: Psychiatry - Theory, Applications and Treatments


Hardcover: 978-1-53615-458-0. $320.00.

Although consultation liaison (CL) psychiatry has been practiced informally for many years, it has been recognized as a psychiatry subspecialty for less than two decades. This textbook addresses the important interface between the wide range of medical or surgical conditions and comorbid psychiatric disorders encountered in most hospital settings as well as outpatient sites. Because many patients admitted to a general hospital may have one or more psychiatric conditions that require attention and treatment to facilitate their recovery, this book will be an essential addition to any CL psychiatrist’s library; it will be equally useful for consultation liaison psychiatry fellows, psychiatry residents, general psychiatrists who are interested in CL psychiatry or who perform psychiatric consultations from time to time, medical students on their CL psychiatry clerkships, psychiatric nurse practitioners, and attending neurologists and neurology residents and fellows. This book includes chapters that address the most prevalent, as well as rare medical conditions found among hospitalized patients and reviews assessment and treatment of the co-occurring psychiatric condition. For example, the Heart Disease chapter addresses patients’ responses to a new, potentially life-threatening cardiac event, and explains the essential steps and interventions a CL consultant should take to optimize patient care and safety - as well as ways to help the care team to better understand and manage their own stress. Other chapters, among a total of 24, include Women’s Health, Ethical and
How Culture Shapes Suicidal Behavior
David Lester, Ph.D. (Stockton University, Galloway, NJ, US)
In series: Psychology of Emotions, Motivations and Actions
Softcover: 978-1-53615-098-8. $95.00.
e-book: 978-1-53615-099-5. $95.00.
This book explores the role of culture in explaining suicidal behavior. Explanations based on the genes and physiology of individuals, and theories based on psychological variables have difficulty explaining the suicide rate of societies, as well as the occurrence of suicide in individuals. This book illustrates the strong role of culture in determining the suicide rate of societies by looking at the role of the major religion of a society, in particular, Islam, as well as national differences in suicide rates, and the variation of suicide rates within a nation (for example, over the states of the USA). Descriptions of suicidal behavior in some groups are provided, including African American slaves in the 1700s and 1800s, Siberian indigenous peoples, and the Roma. Cultural scripts for suicide are described, such as seppuku, sati, and victim-precipitated homicide, and types of suicide in which the staging of the suicidal act is determined by the culture. Finally, it is argued that, not only does culture have an impact on the suicide rate of a society, but also that culture is the primary determinant of the staging of the suicidal act, that is, the location chosen for suicide (for example, at home versus away from home), the method chosen for suicide, the clothes worn, the motive for the suicidal act, and other choices that the would-be suicide has to make.

The Therapeutic Encounter: Psychotherapy in Everyday Psychiatric Practice
Ross Kalucy (Darling Point, Australia) and Paul Cammell (Department of Psychiatry, University of Melbourne, Australia)
In series: Psychiatry - Theory, Applications and Treatments
Softcover: 978-1-53615-097-1. $95.00.
e-book: 978-1-53615-096-4. $95.00.
This accessible work describes psychotherapeutic techniques and a psychodynamic orientation for everyday clinical practice in psychiatry. It describes how these practices operate in outpatient, inpatient and emergency settings, and proceeds to illustrate this with a range of case studies that cover common mental health conditions. This approach brings case based teaching and discussion alive for the reader, and is more clinically relevant to everyday practice that most other psychotherapy books of its kind. The case studies will become a valuable resource for university courses and clinical training programs as well.

Addiction and Substance Abuse

Battling the Opioid Epidemic
Vincent Hardy
In series: Substance Abuse Assessment, Interventions and Treatment
America is in the middle of an epidemic it has never seen before. The opioid crisis knows no bounds. It is affecting individuals and families in every congressional district. Its consequences, ranging from personal health to the economy, are devastating. The opioid epidemic represents the convergence of the abuses of opioids, heroin, and synthetic drugs like fentanyl. Chapter 1 is a hearing before the committee on the Judiciary of the House of Representatives on challenges and
solutions in the opioid abuse crisis. Chapter 2 reports on the Subcommittee on Oversight and Investigations’ hearing on the DEA’s role in combating the opioid epidemic. Drug cartels operate out of countries in the western hemisphere, and they do so by using sophisticated distribution systems that move narcotics into and across the United States. Heroin supplied by these cartels has created a public health epidemic and fueled drug violence across the United States as reported in chapter 3. Chapter 4 provides an overview of heroin trafficking into and within the United States. It includes a discussion of links between the trafficking of heroin and the illicit movement of related substances such as controlled prescription opioids and synthetic substances like fentanyl. The chapter also outlines existing U.S. efforts to counter heroin trafficking and possible congressional considerations going forward. Chapter 5 evaluates the extent to which DOD has strategy and implementing guidance for the National Guard counterdrug program, and assesses DOD’s processes to approve states’ counterdrug plans and distribute funding to the program, among other things.

Drug Addiction, Trauma and Mental Illness: Interpretation and Intervention
Kam-shing Yip (Department of Applied Social Sciences, Hong Kong Polytechnic University, Hong Kong, China)
In series: Mental Illnesses and Treatments
2019.
Softcover: 978-1-53614-020-0. $95.00.
Research and clinical experiences show that people engaging in drug addiction for some years usually embrace severe mental illnesses including schizophrenia, borderline personality disorder, depression and post-traumatic stress disorder. Schizophrenia usually occurs in patients with prolonged use of amphetamine and hallucinogens. Borderline personality disorder commonly happens in female addicts who have experienced abandonment and childhood abuse. On the one hand, drug addiction can be used to cope with symptoms of severe mental illness. On the other hand, prolonged drug addiction can also induce severe mental illness. A close look into individuals with chronic drug addiction usually review that they encounter suffering, hardship and traumas. There are two types of traumas encountered by people with drug addiction. The first one is trauma before drug addiction and substance abuse. Many of them may have suffered through abuse, oppression and abandonment in their lives. Another one is drug led traumas because of psychosocial deprivation and medical problems induced by chronic addiction. In this book, apart from describing a comprehensive model in understanding and interpreting the complexity of trauma, mental illness and drug addiction, this model is applied and illustrated in clients with borderline personality disorder and schizophrenia, drug addiction and those who have experience different forms of trauma. Related psychosocial interventions are also thoroughly discussed.

Depression and Anxiety Disorders

Novel Approaches in Treating Major Depressive Disorder (Depression)
Milena Ćukić Radenković (Department for General Physiology and Biophysics, University of Belgrade, Belgrade, Serbia and Amsterdam Health and Technology Institute, HealthInc, Amsterdam, the Netherlands)
In series: New Developments in Medical Research
Depression is a serious problem. Serious problems often need a complex solution. In her description of novel approaches to treating depression, Dr. Ćukić is summarizing her results from the beginning of her scientific endeavor. As an engineer of electronics with a strong background in theoretical physics, biophysicist and neuroscientist, she aims at filling in the gap between disciplines needed to bring the innovation in the treatment of depression. Starting from the history of electrical and magnetic stimulation important for this field, she is combining the knowledge from biophysics and electromagnetic to explain how both modalities of stimulation can affect our neural tissue. Reviewing the most essential concepts in physiological complexity, she illustrates all the relevant research in different attempts to understand how we can detect the very subtle changes characteristic for a disorder. Those can be recognized from several electrical signals recorded from the body (electrophysiological signals). Fractional and nonlinear measures are in use for several decades, but are still not widely utilized in clinical practice due to deeply rooted obsolete mathematical models originated from the 19th century. Connecting the powerful models from machine learning (data mining) with measures of complexity and irregularity, Dr. Ćukić demonstrates how their synergy can bring innovative solutions in psychiatry. She tackles crucial questions like “Should scientific research in psychiatry go online?” One of the central questions she is trying to answer is why two modalities of electromagnetic stimulation-TMS and tDCS—are effective in treatments of depression. A combination of fractal and nonlinear analysis and a well-performed machine learning can become a useful addition to present practice: decision support solution. We can consider it a test which is
accessible, easy to use and cost-effective in comparison to many other methodologies tested in contemporary scientific literature. The question is, how long it takes that something scientifically proven translates to clinical practice. Remember how long it took for all doctors to start washing their hands. We can only hope this translation would be faster. Many people need that badly.

PUBLIC HEALTH

Bioethics and Neglected Diseases
Miguel Kottow, M.D. (Full Professor Universidad de Chile, Santiago, Chile)
In series: Public Health in the 21st Century
Hardcover: 978-1-53615-333-0. $160.00.
Neglected diseases are severe conditions that mainly affect the world’s poorest people. Those suffering from neglected diseases are mostly suffering from tropical infections that have failed to receive priority in pharmaceutical research and development programs, as well as in public health policies aimed at improving availability and access to preventive, diagnostic and curative medicine. The World Health Organization has issued a number of documents directing attention to the plight affecting one third of the world’s population, assisted by active support from private organizations, notably the Bill and Melissa Gates Foundation, but the overall situation remains dismal. In the wake of major socioeconomic processes including globalization, steadily growing economic disparity, healthcare inequality, the instability created by rogue states and terrorism, as well as massive migration, and epidemic outbreaks, the features of neglected diseases have been changing. Neglected populations affected by tropical diseases are suffering increasingly from non-infectious degenerative conditions and disabilities due to untreated chronic maladies. Pockets of poverty and neglect can also be detected in high-income countries, contributing to the emergence of new diseases and the reemergence of infections believed to be disappearing such as tuberculosis and the measles. Included in the issues of neglect are rare diseases, mostly of genetic origin, affecting a small number of patients that suffer from multiple life-shortening functional impairment and organ defects. Effective medicines are extremely expensive, allegedly because research and development of appropriate drugs is resources and time consuming, requiring exorbitant prices to recoup investment from a small number of consumers. Bioethics has been tardy in addressing the suffering and destitution of neglected and rare diseases. Convinced that permanently repeated denunciations blunt the sensitivity towards suffering, whereas statistics are bloodless and unable to elicit commitment, this book attempts to explore a different strategy. In an upstream approach, bioethics needs to engage in ethnographic fieldwork that confronts and shares the context in which people suffer, vividly presenting what epidemiological research has blunted into statistical data. Additionally, a downstream approach is suggested, requiring bioethics to vigorously and openly denounce unethical biomedical and pharmaceutical research, misdeeds in registration and marketing of drugs, and misalignment of policies with the unmet healthcare needs of the destitute. More than being critical observers, bioethicists ought to shed lurking conflicts of interests and seek active participation in planning research and public healthcare practices aimed at improving the lives of medically neglected populations.

Sir Arthur Newsholme
In series: Public Health: Practices, Methods and Policies
Edited by: Joav Merrick (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
Hardcover: 978-1-53615-300-2. $310.00.
Hygiene: A Manual of Personal and Public Health written by Sir Arthur Newsholme in 1902, is a plain and straightforward account of its subject for the general public and for science students; and to have become a practical guide to sanitary inspectors and to medical students, whether preparing for a diploma in public health, or studying hygiene as an important branch of medicine.
How can leadership in service economies be developed and nurtured? This issue is of the utmost importance, because the mode of production and requirements of the leaders are different in manufacturing and service economies. While the focus in manufacturing industries is on “do things right”, the focus of services economies is on “do the right things”. In this book, the authors start out with the Service Leadership Model as well as the ingredients for Service Leadership knowledge, attitude and behaviors (i.e., skills). Second, psychometric properties of three validated measures on Service Leadership knowledge, attitude and behavior are presented. In these chapters, the internal consistency, convergent validity and factorial validity of the measures are presented. Third, the psychosocial correlates and norms associated with these three measures of Service Leadership are presented. Through these chapters, the authors attempt to establish the psychometric properties and norms of the scales assessing Service Leadership knowledge, attitude and behavior. It is their humble wish that the related work and the developed assessment tools can be used in the training, personnel decisions, intervention and research contexts.
Interstitial Lung Disease: Causes, Diagnosis and Treatment
Liva T. Villadsen
In series: Pulmonary and Respiratory Diseases and Disorders
2019.
Softcover: 978-1-53616-246-2. $95.00.
Interstitial lung diseases are a diverse group of acute and chronic pulmonary disorders characterized by a variable amount of inflammation and/or fibrosis. In Interstitial Lung Disease: Causes, Diagnosis and Treatment, the authors explore the role of genetics in the pathogenesis of interstitial lung diseases, as well as develop new diagnostic modalities and identify novel therapeutic targets. This compilation goes on to discuss acute infiltrative lung disease, a heterogeneous group of lung disorders characterized by diffuse parenchymal lung involvement. This group of infiltrative lung diseases may result in five histopathological presentations: diffuse alveolar damage, diffuse alveolar hemorrhage, immunologic alveolitis, organizing pneumonia and acute eosinophilic pneumonia. High-resolution computed tomography is proposed as a more sensitive and accurate method in diagnosing interstitial lung disease through specific patterns which are highly suggestive of a subtype of interstitial pneumonia. High-resolution computed tomography is also proposed for the diagnosis of sarcoidosis, a systemic granulomatous disease which involves the lungs in more than 90% of cases. It is one of the leading causes of interstitial involvement in lung diseases, and its diagnosis is based on compatible clinical, biological, imaging and anatomopathological features. The closing chapter aims to identify diagnostic procedures for the early diagnosis of cardio-pulmonary complications, delineate a proper methodology to monitor complications, and define therapeutic guidelines.
short and long term prognosis. However, despite the abundance of literature supporting the benefits of NIV, there is controversy in regards to the timing of initiation and termination of NIV in the disease process, leading to unsettled issues and constant analysis for both researchers and physicians in clinical practice. There is scarce literature that describes thorough predictors of success or failure of NIV. There is need to develop tools or models to predict response to NIV, optimize those responses, increase tolerance to NIV technology (mechanical ventilator, interface, or ventilatory mode) that can be translated to increase success rate of NIV. The book “Non-Invasive Ventilation: A Practical Handbook for Understanding the Causes of Treatment Success and Failure” is the first text published with well-defined objectives that analyze the success and failure response of non-invasive mechanical ventilation. The table of contents is structured in an order to meet the defined objectives based upon respiratory physiology: – Breathing patterns – Respiratory muscular fatigue (inspiratory / expiratory muscle) – Lung mechanics (compliance and airway resistance) – Gas exchange (hypercapnic/hypoxemic), and neurologic determinants) Sections of this book will address different aspects of NIV ranging from perspective pathophysiological benchmarks and clinical studies, to diagnosis and monitoring elements of basic lung – patient – ventilator interaction, including: – Monitoring lung mechanics (pressure curves, volume (tidal and minute) (lower and high) and leakages (concept / monitoring), in a broad and profound way – Illustrating potential determinants and scenarios in non-invasive-ventilation The aim is to describe a summary of global and practical recommendations of the utility of NIV that will affect the reader’s capability in treating respiratory comorbidities. These include: – Chronic respiratory diseases like obstructive sleep apnea, – Obesity hypoventilation syndrome, and – Cardiac chronic insufficiency.

Non-Invasive Ventilation: A Practical Handbook for Understanding the Causes of Treatment Success and Failure
Antonio M. Esquinas, MD, PhD (Fellow Chest College Physicians (FCCP), Internacional Fellow American Associations Respiratory Care (AARC), Intensive Care Unit; Hospital Morales Meseguer. Murcia, Spain)
In series: Pulmonary and Respiratory Diseases and Disorders
Hardcover. 978-1-53615-199-2. $270.00.
e-book. 978-1-53615-200-5. $270.00.
Non-invasive ventilation (NIV) has shown, in the last two decades, to be an essential ventilatory management modality for treatment of patients with diverse etiologies of acute and chronic respiratory insufficiency, with significant favorable outcomes in terms of improvement in gas exchange, respiratory muscle fatigue, and dyspnea. NIV is an alternative to invasive mechanical ventilation, with significant improvement in short and long term prognosis. However, despite the abundance of literature supporting the benefits of NIV, there is controversy in regards to the timing of initiation and termination of NIV in the disease process, leading to unsettled issues and constant analysis for both researchers and physicians in clinical practice. There is scarce literature that describes thorough predictors of success or failure of NIV. There is need to develop tools or models to predict response to NIV, optimize those responses, increase tolerance to NIV technology (mechanical ventilator, interface, or ventilatory mode) that can be translated to increase success rate of NIV. The book “Non-Invasive Ventilation: A Practical Handbook for Understanding the Causes of Treatment Success and Failure” is the first text published with well-defined objectives that analyze the success and failure response of non-invasive mechanical ventilation. The table of contents is structured in an order to meet the defined objectives based upon respiratory physiology: – Breathing patterns – Respiratory muscular fatigue (inspiratory / expiratory muscle) – Lung mechanics (compliance and airway resistance) – Gas exchange (hypercapnic/hypoxemic), and neurologic determinants) Sections of this book will address different aspects of NIV ranging from perspective pathophysiological benchmarks and clinical studies, to diagnosis and monitoring elements of basic lung – patient – ventilator interaction, including: – Monitoring lung mechanics (pressure curves, volume (tidal and minute) (lower and high) and leakages (concept / monitoring), in a broad and profound way – Illustrating potential determinants and scenarios in non-invasive-ventilation The aim is to describe a summary of global and practical recommendations of the utility of NIV that will affect the reader’s capability in treating respiratory comorbidities. These include: – Chronic respiratory diseases like obstructive sleep apnea, – Obesity hypoventilation syndrome, and – Cardiac chronic insufficiency.

SPECIAL TOPICS

Across the Divide: Health and Wellbeing in Rural Australia
Peter William Harvey (College of Medicine and Public Health, Flinders University, South Australia)
In series: New Developments in Medical Research
2019. 188 pp.
Hardcover. 978-1-53614-983-8. $95.00.
e-book. 978-1-53614-984-5. $95.00.
Early Australian pioneers were blocked from advancing into the interior of the continent by the Great Dividing Range that runs along the east coast of the country. In their endeavours to expand the colonies westward and to open Australia economically, these early developers eventually found routes across the Great Dividing Range and into the interior. With this expansion, the larger and more productive Australia was born, for better or worse. Today, Australians face a ‘divide’ of a different kind, but one that, nonetheless, requires crossing if we are to secure our national wellbeing into the future. The emerging division between rural and metropolitan Australia, along with the social, cultural and health inequities between the two groups has been the focus of government and social programmes in Australia for generations, yet the condition persists and is today exacerbated by the inexorable movement of Australian populations to larger regional centres and to our major coastal cities. For many years health researchers and health service providers have embraced the idea that scientific research into the social, economic, physical and psychological aspects of health problems in the community is the tried and true way to progress policy and initiate action for improvement of our healthcare system. The age-old grail is to demonstrate scientific facts and implement policy on that basis. If this process is maintained, all will be well. The wellspring of this current work is its embodiment of a city/country dichotomy in the life of the author. The strongest message about healing the divide between the two cultures (if indeed this might even be possible) comes not via scientific investigation directly, but via the existential and phenomenological experience first and foremost and is informed by the scientific motif after the fact. The ‘divide’, which
is the focus of this work, has emerged in the interplay between an essentially nineteenth century European based rural ideology of frontier freedom, self-reliance, rugged determination and independence and an emerging Asia-centred urban ideology underpinned by more modern twenty-first century concepts of economics, life, space, place and opportunity. The book combines personal experiences of rural living with overviews of initiatives that aim to reduce inequities between rural and metro communities by training and supporting health professionals to work in rural areas where there is often an acute shortage of practitioners to meet the needs of these communities. This shortage of professional people in rural areas contributes to the growing separation of rural and urban cultures and to the poorer health status of rural people compared with that of urban populations. In this context, the book Across the Divide: Health and Wellbeing in Rural Australia explores options for reducing these divisions and improving the health and wellbeing of rural populations in Australia. It focuses on health status and the emerging inequities experienced by rural people and explores ways of improving access to services and practicing health professionals, health education and health literacy.

Adaptive Filtering Techniques for Remote Health Care Monitoring Systems
Zia Ur Rahman, Ph.D. (Department of Electronics and Communication Engineering, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, Guntur, A.P., India)
In series: Biomedical Devices and their Applications
Hardcover: 978-1-53614-749-0, $195.00.
e-book: 978-1-53614-750-6, $195.00.
Adaptive Filtering Techniques for Remote Health Care Monitoring Systems aims to present a full picture of the state-of-the-art research and development of adaptive signal processing applications in various real-time applications. This book covers some important applications like MIMO, artifact removal, speech enhancement, beam forming, brain computer interface, genomic analysis, biomedical signal processing, healthcare technology, inter symbol interference cancellation, and others. It is certainly not the authors' ambition to cover everything concerning adaptive filtering principles and applications. Rather, this edited book features the latest methodological, technical and practical progress on promoting the successful use of adaptive filtering principles and applications, which are more useful in the current day scenario. This book consists of ten chapters contributed by prominent researchers from throughout the world. The intended audience of this book will mainly consist of researchers, research students and practitioners in adaptive filtering and applications. This book is also of interest to researchers and industrial practitioners in areas such as algorithm developers, biomedical engineering, biomedical instrumentation, VLSI circuits design, and embedded systems. This edited book will present research outcomes on theoretical and technical issues related to real-time applications. The authors would like to convey their appreciation to all the contributors, including the accepted chapters' authors, and many other participants who submitted their chapters that cannot be included in the book due to space limitation.

Advances in Health and Natural Sciences
Burcu Yuksel (Kocaeli University, Vocational School of Health Sciences, Turkey) and Mustafa Sencer Karagul (Kocaeli University, Kartepe Vocational School of Equine Science, Kocaeli, Turkey)
In series: Public Health in the 21st Century
Researchers and graduate students need to keep up with the advances in natural health sciences that occur almost daily. This edited collection of state of the art chapters will provide scientists, educators, and researchers in this vital field with the most recent developments and disseminate it globally. This book, organized into nine chapters, features scientists from around the globe contributing diverse topics in mostly natural, biological and health sciences. The edited book aims at highlighting the state of the art research and recent findings in of agricultural, environmental, biological, marine and medical sciences and biotechnology, and bridging theoretical research with current applications. This edited book will be of significant value to researchers, graduate students as well as practicing scientists working in these vibrant fields.
Advances in Medicine and Biology. Volume 138
Leon V. Berhardt

In series: Advances in Medicine and Biology
Hardcover: 978-1-53615-065-0. $250.00.

In Advances in Medicine and Biology. Volume 138, the authors reflect on the development of ethically reliable procedures that keep in line with cultural traits while guaranteeing proper implementation of the fundamental principles of bioethics, within the framework of ethically binding biomedical research. As such, this write-up gives an overview on the ethical implications and regulatory issues governing African traditional medicine research practices in Cameroon. This collection goes on to present the relationship between riboflavin’s chemical properties and its exploitable applications in both living organisms and analytical assays. Riboflavin, popularly known as Vitamin B2 or Vitamin G, was historically the second identified vitamin and presents itself as a yellow solid substance, and its higher stabilization is observed at pH 5. In the following study, technological discrimination of lactic acid bacteria species isolated from fermented cereal foods available in Abidjan are presented as of interest, because these species are used as starter cultures to optimize fermented product quality. The sugar fermentation pattern and identity of twenty-three lactic acid bacteria isolates were carried out by using a ApiwebTM/Api50 CHL test kit. Protease, amylase, and bacteriocins production as well as growth parameters after 18h culture are performed. Topical naltrexone therapy has been reported to reverse diabetes complications in type 1 and type 2 animal models in an effective and non-toxic manner. Because of this, the authors discuss the mechanism of action of naltrexone, as well as data documenting its efficacy in therapy for diabetic complications, supporting the repurposing of naltrexone for clinical use. Additionally, general opioid receptor antagonists such as naltrexone that block classical opioid receptors mu, delta, and kappa are still widely used to reverse drug and alcohol overdose/use. With the discovery of the opioid growth factor receptor axis as a novel biological pathway involved in homeostasis of replicating cells and tissues, the role of opioid receptor antagonists is expanded. Syndecans are transmembrane heparan sulfate proteoglycans expressed in a variety of cells, and their heparan sulfate glycosaminoglycan side chains bind to several proteins (such as chemokine and growth factors) taking on various biological roles. Several types of proteoglycans, including syndecans in the lung as components of extracellular matrices, were previously recognized only as “molecular glue” that supports the structure of tissues. However, growing evidence suggests that proteoglycans have a variety of biological activities such as control of inflammation, wound healing, development and homeostasis, which the authors examine. M-type phospholipase A2 receptor is a type I transmembrane receptor and belongs to the mannose receptor family. In 2009, M-type phospholipase A2 receptor was identified as a target intrinsic antigen in most cases of primary membranous nephropathy. The authors propose that in addition, the detection of circulating anti-M-type phospholipase A2 antibodies is useful not only for the differential diagnosis of primary membranous nephropathy but also for monitoring treatment, including after renal transplantation. The most frequent familial amyloidosis presentation is due to transthyretin, a protein analyzed in the concluding chapter and originally referred to as pre-albumin. There are more than eighty transthyretin mutations, the majority being amyloidogenic. The carriers of the mutation on this protein genes show a clinical heterogeneous amyloidosis according to the nature of aminoacid substitution.

Advances in Medicine and Biology. Volume 139
Leon V. Berhardt

In series: Advances in Medicine and Biology
Hardcover: 978-1-53615-238-8. $250.00.

Myocardial fibers from diseased human atria have elevated resting membrane potential, depressed maximal amplitude of the action potential, and decreased upstroke velocity. Sinus node dysfunction may be due to an alteration in the generation of impulses within the sinus node and/or a disturbance of the conduction of impulses from the sinus node to the atrial myocardium. In this chapter, investigations based on the recording of abnormally prolonged and fractionated atrial local electrograms during sinus rhythm atrial catheter mapping in patients with sinus node dysfunction have provided important knowledge about the electrophysiological properties of the pathological atrium. In chapter two, the effects of caffeic acid and its related compounds on 7-carboxyheptyl radical formation were examined in the reaction mixtures of (z)-9-octadecenoic acid. Carboxyheptyl radical formation was inhibited by caffeic acid, catechol, gallic acid, chlorogenic acid, ferulic acid, noradrenaline, 2-hydroxibenzoic acid, 3-hydroxybenzoic acid and 4-hydroxybenzoic acid. However, quinic acid, benzoic acid and p-anisic acid had no effect on radical formation. These results suggested that the phenol moiety is essential for radical inhibition. The authors discuss how, in general, biomolecules [DNA, proteins [Aβ-amyloid, u- synuclein, Tau protein, etc.], antioxidant molecules [beta-carotene, lycopene, astaxanthin, sulfurafane etc] and molecules bearing regions of high electron densities, [conjugated double bonds, polyene chains, lone pairs of electrons in O, N, S atoms of various molecules etc] can accommodate them in the empty π* orbital of singlet oxygen, provided that their geometry and energy suits the π* orbital’s geometry and energy. This collection explores high intensity exercise between 10 to 240 seconds duration results in an excess of hydrogen ions and acute, transient reductions in blood and muscle pH. Sodium bicarbonate ingestion is a strategy employed by many athletes to increase the buffering capacity for such hydrogen ions in an attempt to offset acidosis and improve or maintain performance. This commentary will overview conventional ingestion strategies, and consider a complimentary approach to ingestion dosage in relation to a range of body masses. The next study examined the effects of sodium bicarbonate ingestion upon sprint performance using a novel repeated sprint...
shown that male reproductive organ also acts as a nutrient sensor to optimize fecundity. Although this is well characterized in female oogenesis, it has been characterized tests of carbapenem resistant bacteria in the environment, as well as epidemiology updates and clinical recommendation and the role of biofortification is also addressed. The authors discuss poly(methyl methacrylate), an artificial polymer resin that can be produced through distinct processes, including solution, suspension and emulsion polymerizations. Particularly, poly(methyl methacrylate) is completely amorphous, but presents high tensile strength and excellent dimensional stability due to its rigid polymer chains. Next protocol. More specifically, this protocol assessed sprint performance to a given level of induced fatigue. The purpose of the following chapter is to review the history of the PSQI and evaluate its uses. Additionally, research findings through its use will also be discussed. Within one study, the most recent theoretical techniques that determine the one-dimensional coordinate-dependent D(Q) are reviewed and new results of D(Q) calculations applied in proteins are presented. It is shown that a proper characterization of D(Q) is sufficient to construct the free-energy landscape and folding rates. The diffusive approach can be augmented to other relevant biological systems in order to characterize the underlying kinetic and thermodynamic processes. The closing chapter discusses firing rate asymmetry of the left and right crayfish caudal photoreceptors (CPR-L and CPR-R, respectively) caused by light pulses. The CPR is a single bilateral non-visual neuron that responds directly to light.

Advances in Medicine and Biology. Volume 140
Leon V. Berhardt
In series: Advances in Medicine and Biology
Hardcover: 978-1-53615-335-4. $250.00.
Advances in Medicine and Biology. Volume 140 opens by discussing vascular endothelial growth factor, an attractive factor for antiangiogenic therapy for glioblastoma. Although bevacizumab, a humanized anti-vascular endothelial growth factor antibody, improves the progression-free survival of patients with glioblastoma, prolonged overall survival has been attained only in few patients with a proneural type of glioblastoma. As such, bevacizumab is increasingly used to treat newly diagnosed and recurrent glioblastoma. Bevacizumab selectively inhibits glioblastoma growth by targeting membrane-bound vascular endothelial growth factor, inhibiting angiogenesis and thus halting tumor growth. Vascular endothelial growth factor plays a major role in wound healing, with upregulation starting on day three and levels remaining high up to 24 weeks after wound creation. The authors discuss how, to avoid postoperative wound complications following neurosurgical procedures, perioperative management is indispensable. As perioperative preparation, shaving or minimal hair removal should be avoided to prevent minor trauma to the scalp and surgical-site infection. Excess electrocautery coagulation and metal skin clips are efficacious during skin incision for preventing blood loss, but might cause skin edge necrosis and alopecia. Next, the authors briefly summarize the actions of melatonin in a broad range of effects with a significant regulatory influence over many of the protection processes against Fe overload effects. Melatonin is a ubiquitous compound present in bacteria and eukaryotes, which in vertebrates, is released at night from the pineal gland to induce sleep. Quantitative foundations of continuous non-invasive prenatal screening are explored in the following chapter. The mosaicism interval and the interval-based estimate of the degree of mosaicism are introduced, and the uncertainty of the estimation of the degree of mosaicism can be quantified by the width of the mosaicism interval. Continuing, the authors emphasize the implication of SRY-related box factors in male sex determination and differentiation, leading to fertility. The production of spermatooza in adulthood requires a coordination in the regulation of gene expression by a multitude of SRY-related box transcription factors within the testis. The authors perform an overview of the mechanisms of action of SRY-related box transcription factors throughout male development contributing to fertility. The objective of the penultimate study is to evaluate, in vitro, the coagulating, cytotoxic, oxidizing and antioxidant effects caused by the Bothrops jararacussu and B. moojeni crude venoms. The crude venoms protein profiles are characterized, and the biological effects are evaluated and compared between the species. Among the activities triggered by Crotalus durissus terrificus snake venom, coagulation is both intriguing and contradictory since the venom contains in its composition both coagulant and anticoagulant precursor proteins. The concluding work describes the in vitro effects of crude venom and purified proteins from Crotalus durissus terrificus snake venom as they affect coagulation factors of the extrinsic, intrinsic, and common clotting pathways in citrated human plasma.

Advances in Medicine and Biology. Volume 141
Leon V. Berhardt
In series: Advances in Medicine and Biology
In the opening chapter of Advances in Medicine and Biology, Volume 141, the authors describe the importance of the response of photon counting detectors, as well as taking into consideration the detector’s response when analyzing objects using a multi-pixel-type photon counting detector for medical X-ray imaging. Following this, the authors discuss how the image quality of radionuclide tomography strongly depends on the method of reconstruction, which can be broadly classified into two types: filtered back projection and iterative reconstruction. Vitamin E function, metabolism, nutritional recommendation and the role of biofortification is also addressed. The authors discuss poly(methyl methacrylate), an artificial polymer resin that can be produced through distinct processes, including solution, suspension and emulsion polymerizations. Particularly, poly(methyl methacrylate) is completely amorphous, but presents high tensile strength and excellent dimensional stability due to its rigid polymer chains. Next, the authors highlight the taxonomy, description and characterization tests of carbapenem resistant bacteria in the environment, as well as epidemiology updates and clinical aspects of infections caused by these microorganisms. Nutrient conditions affect the reproductive potential and life span of many organisms through the insulin signaling pathway. Although this is well characterized in female oogenesis, it has been shown that male reproductive organ also acts as a nutrient sensor to optimize fecundity. The closing chapter discusses the
Drosophila male accessory gland, as it has functions similar to those of the mammalian prostate gland and the seminal vesicle, and secretes accessory gland proteins into the seminal fluid.

**Advances in Medicine and Biology. Volume 142**
*Leon V. Berhardt*

In series: *Advances in Medicine and Biology*
Hardcover: 978-1-53615-619-5. $250.00.

The opening chapter of Advances in Medicine and Biology, Volume 142 provide recommendations and tips to assist medical oncologists, hematologists and clinicians in investigating and managing early catheter malfunction. The aim of the following chapter is to ease prompt recognition and management of central venous catheter-related infectious outbreaks, as they may severely jeopardize the outcome of infected patients. Next, the placement and maintenance of central venous access devices in the neonatal patient population, with particular regard to umbilical catheters and peripherally inserted central catheters is examined. The authors go on to investigate whether low trabecular bone score during adolescence is predictive of increased fracture risk during adulthood, as well as whether recovery may result in correction of compromised microarchitecture. A summary of the involvement of miRNAs in different beta-thalassemia variants, their association in expression of various globin types, (especially gamma-globin) and their implications as prognostic and therapeutic markers in beta-thalassemia are presented. Additionally, an account is provided on various commonly used monoclonal antibodies targeting the transferrin receptor. The authors also discuss the mechanisms through which monoclonal antibodies targeting the transferrin receptor have been employed to deliver drugs, enzymes, toxins and cytokines to treat various neurological cancers, Alzheimer’s disease, Parkinson’s disease, lysosomal storage diseases and cerebral ischemia. This compilation assesses the use of clarithromycin in the long-term management of chronic rhinosinusitis with polyps after endoscopic sinus surgery, showing that a low-dose clarithromycin use for a period of one month can improve patient complaints. The role of aromatase inhibitors for the treatment of endometriosis is subsequently described. Numerous surgical procedures have been reported in patients with situs inversus. The penultimate chapter provides insight regarding laparoscopic surgeries for various indications in patients with situs inversus, along methods to address them. The final chapter improves upon the current knowledge of Stenotrophomonas maltophilia, which is a gram-negative rod and typical soil inhabitant bacteria.

**Advances in Medicine and Biology. Volume 143**
*Leon V. Berhardt*

In series: *Advances in Medicine and Biology*
Hardcover: 978-1-53615-814-4. $250.00.

The opening chapter of Advances in Medicine and Biology, Volume 143 discusses the main indications of prophylactic oophorectomy, as well as its risks, benefits and impacts on women’s quality of life. Additionally, the authors examine PEGylation, a chemical reaction that allows for the conjugation of a polyethylene-glycol group to another compound. Since the commercial release of adagen, the first approved PEGylated drug, PEGylation has proven to be a successful strategy for the generation of efficient drugs. Following this, this compilation analyzes the morphological and functional disorders that may be induced by oxaliplatin. The authors present the possible side effects of this drug upon several organs, as well as the mechanisms that are activated by the nominated drug. The authors also summarize the processes that might be occurring in Werner syndrome cells during DNA replication that then lead to the genomic instability and replication stress and, ultimately, a p38MAPK-induced premature senescence. The results of the authors’ studies combining the granulocyte colony-stimulating factor and enteral sorption therapy are presented in the closing chapter to ameliorate common side effects of such potent and toxic anti-cancer alkylating agents, such as melphalan.

**Advances in Medicine and Biology. Volume 144**
*Leon V. Berhardt*

In series: *Advances in Medicine and Biology*
Hardcover: 978-1-53615-842-7. $250.00.

The opening chapter of Advances in Medicine and Biology, Volume 144 summarizes the generation of amniotic fluid, role and its clinical significance of protecting the fetus from external trauma. Next, the role of in silico and in vitro methods are used for the prediction of cytotoxicity which is measured in terms of Selectivity Index or Therapeutic Index, which is defined as the ratio of CC50 and EC50. Additionally, the authors discuss the principles of aptamer selection and in vitro applications for bench scientists in molecular imaging, including aptahistochemistry, tissue imaging, enzyme-linked aptamer assay, aptablot, aptamer-mediated flow cytometry and mass cytometry, and super-resolution microscopy. In order for natural rubber latex nanoparticles to be employed in tissue engineering, they need to have designed biological interaction with cells as well as favorable mechanical properties. Cells can delicately sense and respond to external nanoscale features in intricate living systems. With this in mind, chapter four demonstrates an in-depth understanding of...
how cell differentiation may bring a new perspective to tissue engineering including new bone regeneration and cartilage therapy. In the penultimate chapter, a study of the relationship between the adipokine signaling dysregulation and the androgen status is proposed as necessary to develop new adipokines-based approaches to restore the steroidogenesis and spermatogenesis in male in the metabolic and endocrine diseases. In recent stress research, coping flexibility, which is defined as an individual’s ability to modify their coping strategies effectively according to the demands of different stressful situations, has received considerable attention. The author of the closing chapter presents two cross-sectional studies in order to examine the relationship between insomnia and coping flexibility for daily stress.

Advances in Medicine and Biology. Volume 145
Leon V. Berhardt
In series: Advances in Medicine and Biology
Hardcover: 978-1-53615-924-0. $250.00.

The opening chapter of Advances in Medicine and Biology. Volume 145 examines the role of different reported oviduct factors in modulating gamete function, fertilization and early embryo development. The guidelines of occupational post-exposure prophylaxis are reviewed in order to help guide clinicians in managing occupational exposure to human immunodeficiency virus. Next, the authors discuss how the detection of bacterial genes in the genome of eukaryotic cells has provided evidence for gene exchange between bacteria and eukaryotic cells, mainly from bacteria to fungi. The important structural information for potent and selective HDAC3, a zinc-dependent histone deacetylases isoform, inhibitors along with the structure-activity relationships of a handful of molecules may enrich the knowledge of academics and industry personnel. As such, this compilation provides a deep insight into HDAC3 and related inhibitors. In the penultimate chapter, the authors assess the algorithm of cell dead mechanism in spontaneous intracerebral hemorrhage and how the impact of intraperitoneal celecoxib treatment can increase the survival of neural stem cells. The concluding chapter focuses on how foreign protein accumulation in vacuoles proves to be a fruitful production strategy for for biological and industrial enzymes.

Advances in Medicine and Biology. Volume 146
Leon V. Berhardt
In series: Advances in Medicine and Biology
Hardcover: 978-1-53615-961-5. $250.00.

In Advances in Medicine and Biology. Volume 146, the authors begin by exploring the mammalian eye lens, a unique transparent organ, with a distinctive cellular architecture and polarity. For more than a century, it has been used as a model to study mechanisms of induction, morphogenesis, differentiation and disease. Following this, the authors discuss guanylyl cyclase binding proteins (GBP-1), an interferon-inducible large GTPase involved in the epithelial barrier and cell proliferation. Induction of GBP-1 by proinflammatory cytokines is regulated via various signaling pathways and is a reliable marker of interferon-γ-activated cells in various diseases. This compilation also examines remifentanil, a synthetic fentanyl derivative and ultra-short acting, selective μ-opioid receptor agonist. Its chemical structure includes a methyl-ester ring that allows its hydrolysis by non-specific plasma and tissue esterases. The authors suggest that the role of sevoflurane in preventing oxidative damage and inflammatory response to ventilator injury-induced lung injury requires further investigation. Sevoflurane is a halogenated anaesthetic developed in the early ’70s which preserves the hypoxic vasoconstriction reflex, doesn’t irritate the airways, and maintains self-regulation of the district circles. Additionally, the current knowledge on immune-checkpoint inhibitors, immune mediated hepatitis and pancreatitis is summarized. Immune-checkpoint inhibitors continue to revolutionize cancer therapy and are expected to be utilized in an increasing number of malignancies in the coming years. The closing chapter discusses vitamin E, a collective term including compounds which are either naturally occurring or synthetic analogues exhibiting the biological activity of vitamin E. Vitamin E is a micronutrient and fat-soluble vitamin which has an important role in human beings, particularly children.

Advances in Medicine and Biology. Volume 147
Leon V. Berhardt
In series: Advances in Medicine and Biology
Hardcover: 978-1-53616-062-8. $250.00.

The first chapter of Advances in Medicine and Biology. Volume 147 reviews actions on bone longitudinal growth, muscle, kidney, calcium, nitrogen, phosphorus and potassium, body composition, carbohydrate metabolism, insulin, lipids, protein actions, coagulation and fibrinolysis, adipokines, cardiovascular effects, and retina. Next, the authors discuss the values and boundaries of various surgical approaches to achieve interbody fusion, and introduce a novel fusion technique named extraforaminal lumbar interbody fusion. Each indirect decompression procedure for the intervertebral foramen is introduced in detail, and their influence on intervertebral foramen parameters is discussed, including foraminal height and foraminal area. This provides detailed information on the quantitative decompression index, thus proving helpful for
surgeons. Following this, prodrugs are examined, having been extensively studied in the field of drug development. Continuous research in developing prodrugs/drug conjugates has resulted in an improvement of the lipophilicity, aqueous solubility, oral bioavailability, chemical stability, prolongation of action, reduced toxicity and site specific drug delivery of parent drugs. The susceptibility of germline stem cells to genetic damage induced by oxaliplatin and its mechanism of action is also discussed. Germ cells are responsible for the transmission of genetic information from males to their progeny. The authors evaluate parenteral nutrition-associated liver disease and how it encompasses a variety of diseases ranging from steatosis to fibrosis and cirrhosis. A systematic review of the literature is executed to pool data from all individually documented patients to evaluate the safety and efficacy of combined liver and inferior vena cava resection in patients with colorectal liver metastasis involving inferior vena cava. Research in subsequent chapter examines how the development of purkinje cells in the postnatal period in rats is accompanied by significant structural and metabolic changes, this being the basis for their growth, maturation, differentiation and functions. The authors evaluate the in vitro leishmanicidal activity of the Vanillosmospis arborea essential oil and its major compound-bisabolol against Leishmania amazonensis in an effort to evaluate its role to treat diseases caused by bacteria, fungi, and protozoa, such as leishmaniasis. Since there are still only few data available for the understanding of cellular and molecular functions of Neurensin genes in spite of the expected critical roles in human brain function, the authors present studies which will contribute to elucidating the mechanism of brain disorders at the molecular level. The concluding chapter focuses on the pharmacokinetic/pharmacodynamic properties of emtricitabine, dosing recommendations, and monitoring in the oral antiretroviral preexposure prophylaxis population.

Advances in Medicine and Biology. Volume 148
Leon V. Berhardt

In series: Advances in Medicine and Biology
Hardcover: 978-1-53616-181-6. $250.00.

Advances in Medicine and Biology. Volume 148 begins by summarizing recent findings in exosome research, highlighting the importance of exosomes as novel biomarkers and regulatory elements in the process of angiogenesis. Specifically, the authors address the potential of exosomes as future diagnostic and therapeutic tools. Additionally, the authors discuss the latest findings on myometrial cells embryogenesis, their later phenotypic changes, and structure and its relation to contractility, particularly focusing on the least understood aspects of the myometrium function. Next, overview of new developments in breast cancer targeted therapies is provided, and future prospects for directed therapeutic strategies are discussed. Recent advances in targeted therapy have decreased the morbidity and enhanced the quality of life of cancer patients. Several strategies to combat H1N1 through in silico approach along with the discovered drug candidates are reviewed, such as neuraminidase inhibitors, M2 proton channel blocker, and RNA polymerase-complex inhibitor to interfere with H1N1 virus replication. H1N1, also recognized as Swine Flu, is a subtype of influenza A virus which belongs to the orthomyxovirus category. This compilation also explores acute kidney injury, a life-threatening situation which has a mortality rate of up to 50%. Histone deacetylase inhibitors were first used for treating different types of cancers, but recently their immunomodulatory and anti-apoptotic effects in renal cells in vitro have been noticed. Thus, the effects of histone deacetylase inhibitors inhibitors in preventing acute kidney injury are reviewed. The closing paper reviews the literature regarding how to obtain an optimal anatomical reduction in femoral neck fractures in patients under 65 years old, and functional results are discussed in relation to specific fixation implants, fracture patterns and patient-related factors.

Advances in Medicine and Biology. Volume 149
Leon V. Berhardt

In series: Advances in Medicine and Biology
2019.
Hardcover: 978-1-53616-221-9. $250.00.

This collection begins by discussing bendamustine, a nitrogen mustard derivative that consists of a mecloethamine group, butyric acid and a benzimidazole ring. Bendamustine has been synthesized in 1963, but in recent years it has been shown to be effective in treating lymphoproliferative diseases and solid tumors. Additionally, the authors present the efficacy of structure variation of bendamustine for the enhancement of the lipid membrane partitioning and tissue penetration, as well as drug-likeness. A total of 10 novel compounds are presented, wherein seven have higher Log P values and three have lower Log P values than that of bendamustine. Advances in Medicine and Biology. Volume 149 also discusses metabolic syndrome, a growing major clinical challenge for global health resultant from over-consumption of energy and obesity. Following this, the authors address the importance of antimicrobial resistance in human and veterinary medicine, focusing on antimicrobial peptides such as nisin as therapeutic alternatives. A study is presented wherein it is concluded that oligodendrocyte dysfunction in multiple system atrophy significantly affects subcortical anatomical pathways. Moreover, the spatial patterns of the glial cytoplasmic inclusions in multiple system atrophy contrast with those reported for filamentous neuronal inclusions in other neurodegenerative diseases. Next, the authors summarize the recent discoveries expounding how β-cell identity and heterogeneity evolve in diabetes mellitus, discussing a new perspective of β-cell function salvage in diabetes mellitus development. Yeast cell cycle arrest and its consequences are analyzed in the subsequent chapter. Cell cycle arrest results in programmed cell death, such as apoptosis, wherein cells are made to commit
suicide. The penultimate study evaluates the effect of anodal transcranial direct current stimulation on cognitive and neurophysiological functions in patients with moderate cognitive impairment. Lastly, to investigate the role of CD44 in the development of allergic respiratory inflammation, a mouse model of airway allergic inflammation induced by transnasal administration of helminthic and mite allergens is used to analyze bronchoalveolar lavage fluid and airway hyper responsiveness.

**Advances in Medicine and Biology. Volume 150**

**Leon V. Berhardt**


Advances in Medicine and Biology. Volume 150 first discusses how the emergence of multidrug resistant gram-negative bacteria, along with the lack of development of new antibiotics, led the medical community to look to polymyxins for therapeutic uses in critically ill patients. Next, the authors go on to discuss lenalidomide, a chemical analog of thalidomide and a member of the group of immunomodulatory or cereblon-binding drugs. Lenalidomide has antineoplastic, antiproliferative, antiangiogenic, anti-inflammatory, pro-erythropoietic, and immunomodulatory properties. Lenalidomide binds to a specific hydrophobic pocket in the protein cereblon. This pocket is coded by the exons 10 and 11 on the C-end of cereblon gene. Cereblon interacts with the DNA damage-binding protein-1, cullin 4, and regulator of cullins 1 to form the E3 ubiquitin ligase complex. Lenalidomide also enhances the antitumor effect of chimeric antigen receptor modified T cells in murine models of aggressive B-cell non-Hodgkin lymphoma. Lenalidomide has also been studied in the treatment of cutaneous manifestations of systemic lupus erythematosus and neurodegenerative disorders connected with neuroinflammation, such as amyotrophic lateral sclerosis. Additionally, the authors discuss the current evidence on the use of troponin as a prognostication biomarker in neonatal encephalopathy, as well as the importance of monitoring cardiac function after hypoxic ischaemic brain damage. The basic science and clinical significance of CD180-negative plasmablasts in various autoimmune and inflammatory diseases is reviewed. In systemic and organ-specific autoimmune diseases, CD180-negative plasmablasts play crucial roles and are useful as a disease marker. Because CD180 has a complex function, the mechanism of the increase of CD180 negative B cells may be different in each disease. In closing, the concept of intensive care rehabilitation was developed with the Federal Rehabilitation Council BAR. Both early rehabilitation for neurological and neurosurgical patients and intensive care rehabilitation for patients with other critical illnesses are detailed.

**Advances in Medicine and Biology. Volume 151**

**Leon V. Berhardt**


Advances in Medicine and Biology. Volume 151 begins with a focus on one of the rapidly growing mycobacteria groups, Mycobacterium smegmatis, used to understand the pathogenesis of Mycobacterium tuberculosis because of the disadvantages in the direct study of tubercle bacilli. The authors propose that a perspective group in the current research and development of novel chemotherapeutic agents with a broad spectrum of activities may be functionalized phenolic derivatives and their metal complexes. The authors also discuss Aeromonadaceae, Gram-negative, rod-shaped bacteria which are ubiquitous in aquatic environments, but they have been also isolated from different types of both fresh and processed foods. Aeromonas species are considered opportunistic pathogens of both aquatic and terrestrial animals. Following this, the role of mannans within Candida biofilms is examined, and the role of Candida biofilms in fungal structure, pathogenesis, and resistance is also addressed. To optimize the application of β-mannanase in practical animal nutrition, factors affecting its effectiveness have to be carefully considered. As such, the authors explore the impact of these factors on efficacy of β-mannanase in the penultimate chapter. The concluding chapter focuses on postoperative nausea and vomiting, common and distressing side effects following surgery and anesthesia. Despite modern antiemetics, short-acting anesthetics and minimally invasive surgery, postoperative nausea and vomiting still affects around 30% of surgical patients, with certain high-risk patients experiencing postoperative nausea and vomiting up to 80%.

**Advances in Medicine and Biology. Volume 152**

**Leon V. Berhardt**


In this compilation, the authors first describe the combined negatively-biased and unbiased cocaine conditioning procedure, aiming to study the potential influence of the initial spontaneous exploratory bias on subsequent cocaine conditioning. Next, the authors perform a critical review about the efficacy of mirtazapine in the treatment of substance dependence and anxiety and related disorders in order to help clinicians, pharmacists and other healthcare workers. Transurethral drug
delivery is reviewed, as well as and the application of ketorolac as an intravesical therapy. Ketorolac tromethamine is a nonsteroidal anti-inflammatory drug and a potent analgesic. The authors go on to discuss current trends in re-innervating functional muscle transfers and the neurophysiological basis for these various techniques. Later, the microglial response to the process of motoneuronal cell death is analyzed by using ionized Ca2+ binding adapter molecule-1 and cFms as microglial markers. Immunohistochemical analysis demonstrates that the number of anti-Iba1 antibody-staining cells increased in the axotomized facial nucleus during 3-5 days post-insult. In the penultimate chapter, a detailed examination was performed of facial muscle innervation by the terminal branches of the facial nerve, in particular the microanatomical distribution to the orbicularis oculi muscle and orbicularis oris muscle. The final study discusses the advantages and concerns related to the use of biofilm reactors for the production of high-value products, and the current challenges to establish E. coli biofilms as a valuable platform to produce recombinant proteins.

Advances in Medicine and Biology. Volume 153
Leon V. Berhardt

In series: Advances in Medicine and Biology
2020.
This compilation opens with a review of the structure and life cycle of neuraminidase in influenza A, and also discusses the method of developing neuraminidase inhibitors derived from natural products and peptides. Following this, the authors describe the different uses of chlorhexidine in the medical field, focusing on dental use. Particularly, the authors discuss its properties, chemistry, forms of presentation, substantivity and cytotoxicity; uses in dentistry: cariology, periodontology, oral surgery and endodontics. Additionally, the authors discuss rufinamide, a novel triazole derivative which differs from commercial antiepileptic drugs. It is used as an adjunctive medicine in children, adults and the elder population, and administered orally. One study discusses antiviral treatment for the avian influenza A virus using neuraminidase inhibitors such as oseltamivir and zanamivir. Although both inhibitors show therapeutic and prophylactic activities against the H5N1 strains, it is proposed that treatment should be further developed in order to increase the efficiency of the inhibitors against the strains. Angiogenesis or neovascularization is a global term which indicates the physiological process involving the sprouting of new blood vessels from the pre-existing ones. The development of new blood vessels from differentiating endothelial cells is called vasculogenesis. This collection addresses how these processes are vital for tissue development and wound healing in damaged tissues. The spectrum of spondyloarthritides with inflammatory bowel disease and enteropathic arthritis is examined in an effort to give the reader an insight into the risk factors, treatment and prognosis of this clinically challenging rheumatic disease. Later, the principles of optical coherence tomography-guided femtosecond laser cataract surgery are explored. The combination of femtosecond laser surgery and optical coherence tomography imaging simultaneously guides the development of next-generation femtosecond surgical lasers in cataract surgery and explores femtosecond-laser surgical strategies. The authors present a novel colorimetric method for the assay of XI using a reducing monosaccharide determination. The test solution was mixed with 20-fold volume of the 50 mM Na2SiO3, 600 mM Na2MoO4, and 0.95 M HCl aqueous solution (pH 4.5), in which a yellow molybdosilicate species was formed. The penultimate chapter introduces the origin, preparation, applications of Taiyi Shenzhen (Taiyi Moxa Stick Moxibustion), and reviews the relevant research in the past ten years. The concluding study focuses on the daily foraging of honeybees, which is one of the most well-organized social behaviors that exist among social insects. Honeybees are extensively used model animals in behavioral studies for understanding the time-space learning, landmark use and concept of learning.

Advances in Medicine and Biology. Volume 154
Leon V. Berhardt

In series: Advances in Medicine and Biology
2020.
Hardcover: 978-1-53616-584-5. $250.00.
Advances in Medicine and Biology. Volume 154 first compares the scleral buckle procedure to pneumatic retinopexy and vitrectomy for the repair of primary rhegmatogenous retinal detachment to evaluate patient outcomes, single surgery reattachment rate, and complications. Following this, the authors review recent advances in liver organoids differentiated from pluripotent stem cells and discuss the future directions of organoid technology. Additionally, the authors compare the efficacy of low-level red and infrared laser irradiation for the correction of adverse side effects in the oral mucosa in patients receiving (chemo)radiotherapy for oral and pharyngeal cancer. In vivo oral mucosa state monitoring is carried out in patients during the course of oral and pharyngeal cancer radiation/chemoradiation therapy using multimodal optical coherence tomography. An overview of the current methods used for diagnosing, classification of fractures, treatment, and prevention of periprosthetic femur fractures following total hip arthroplasty is provided. This collection also investigates the presence of kyphosis in adolescents and the association between the incidence of kyphosis and age, the average duration of the sports training, body mass index, weight, height and pulse in adolescents who have participated in karate, swimming and handball. The authors attempt to describe advancements in the electrochemistry of cytochrome P450 enzymes and study molecular aspects and catalytic behavior of enzymatic electrocatalysis. Moreover, a comprehensive overview of major causes of liver fibrosis, medicinal plants and the role of medicinal plants in combating liver fibrosis is provided. Lastly, this compilation recapitulates the history of artificial intelligence in Chinese medicine, focusing on the
way Chinese medicine is being revolutionized by this state-of-the-art technology, and how healthcare in China is influenced by various artificial intelligence systems.

Advances in Therapeutics and Diagnostics of Human Diseases
S. Gowtham Kumar, PhD (Faculty of Allied Health Sciences, Chettinad Academy of Research and Education (Deemed to be University), Kelambakkam, Tamil Nadu, India), Langeswaran Kulanthaivel, PhD (Molecular Oncology Lab, Department of Bioinformatics, Science Campus, Alagappa University, Karaikudi, India) and N. Madhusudhanan (Department of Pharmacology, P.S.M. College of Dental Science & Research Trichur, Kerala, India)

In series: Medical Procedures, Testing and Technology
Hardcover: 978-1-53615-382-8, $230.00.

This reference book equips readers with cutting-edge information on the many advances in diagnostic and therapeutic treatments for human diseases that have been made in recent years, with examples from laboratory medicine. Diagnostic procedures and treatment protocols are a critical part of the health care system, providing dynamic information that influences provider decisions with respect to disease prevention, diagnosis, treatment procedures, and management of the disease. With advances in medical technologies over the past few decades, diagnostics have become even more essential to the practice of medicine for personalized diagnosis and treatment. Developments in health care technologies have extended the survival prospects of persons all over the globe. Once serious conditions have become considerably easier to manage and even cure in numerous cases. Constant laboratory investigations in the health sciences have expanded the quality of treatment, life-expectancy, as well as the quality of life for patients. In this book, readers will find a detailed discussion of new methodologies in treating diseases, including 3D technology, and prediction of chronic diseases using computation techniques, which provide promising avenues for the diagnosis, treatment, and prophylaxis of diseases.

Biocomposites in Bio-Medicine
Mudasir Ahmad (School of Natural and Applied Sciences Northwestern Polytechnical University Xi’an, PR China), Mohmmad Younus Wani, PhD (Assistant Professor Chemistry Department, Faculty of Sciences, University of Jeddah, Jeddah, Kingdom of Saudi Arabia), Preeti Singh (Department of Chemistry, Faculty of Natural Sciences, Jamia Millia Islamia, Central University, New Delhi, India), Saiga Ikram (Department of Chemistry, Faculty of Natural Sciences, Jamia Millia Islamia, Central University, New Delhi, India) and Baoliang Zhang (School of Natural and Applied Sciences, Northwestern Polytechnical university Xian, PR China)

In series: New Developments in Medical Research
In series: Biochemistry and Molecular Biology in the Post Genomic Era
2019.
Softcover: 978-1-53616-247-9, $95.00.
e-book: 978-1-53616-248-6, $95.00.

This book covers important topics of Biopolymers nanocomposites in simple language with clear presentation. Traces of their use as biomedical and pharmaceutical application, gelatin, polysacharides based nanocomposites for applications in antibacterial/microbial/biomedical engineering, drug delivery system and tissue engineering is covered. Further, it presents the opportunities and applications in the field of biocomposites highlighting recent advances in areas commencing chemical synthesis and biosynthesis for end-user applications. This book will serve as a comprehensive literature guide for beginner researchers to grab the attention of biomedical researchers in both academia and industries to help streamline the efforts and understand the need to develop new biocomposites that could solve some of the most serious biomedical problems. The book is aimed to be a reference material for the academic and research community involved in biomedical research.
Cutaneous Scars: Biology, Clinics and Management
Berna Aksoy (Assoc. Professor, Chief, Department of Dermatology, Faculty of Medicine, Bahcesehir University, Istanbul, Turkey), Hasan Mete Aksoy (Assist. Professor, Department of Plastic, Reconstructive and Aesthetic Surgery, Faculty of Medicine, Bahcesehir University, Istanbul, Turkey), Aslı Tatlıparmak (Assist. Professor, Department of Dermatology, Faculty of Medicine, Bahcesehir University, Istanbul, Turkey) and Erol Koç (Professor, Medicalpark Hospital, Clinic of Dermatology and Cosmetology, Ankara, Turkey)

In series: New Developments in Medical Research

Any cutaneous insult results in wound healing and wound healing results in formation of a scar. Human cutaneous scars represent a very important problem in clinical practice. Human cutaneous scars cause both cosmetic and medical problems in people who have them. There are various types of human cutaneous scars: physiologic normotrophic scars, atrophic scars, and proliferative scars. Additionally, there are scar complications that physicians must deal with. Scar complications include unstable scars, contractures and even development of malignancy at worst. Treatment of scars is also challenging especially in case of development of abnormal scars. Human cutaneous scars have various aspects of interest such as biology, clinical significance, patient perspective, prevention, and treatment. There are various preclinical models for studying them. Scarless healing is another item of interest that is observed in fetal wound healing and in some animals. There are various studies specifically examining the biology and the treatment of proliferative scars. The cutaneous scars
are very common so every physician will face a cutaneous scar-related problem in his/her medical practice. The significance is indicated by the frequency of burn injury and traffic accidents and by the importance of incision scars for any surgeon. The editors of this book have enormous experience in the clinical management of human cutaneous scars. The editors also studied the biology of abnormal scarring by developing new animal models. The editors also have performed clinical studies to increase therapeutic options for the treatment of abnormal scars. In this hardcover book, the aim is to examine human cutaneous scars in every aspect: historical aspects, clinical significance, biology, laboratory and animal models, histopathology, scarless healing, scar complications, and treatment. In this book, all the available treatment methods are examined in detail.

Fundamentals of Leadership for Healthcare Professionals. Volume 2
Stanislaw P. A. Stawicki, MD (Department of Research and Innovation, St Luke’s University Health Network, Bethlehem, Pennsylvania, US), Michael S. Firstenberg, MD (Department of Surgery (Cardiothoracic), The Medical Center of Aurora, Aurora, Colorado, US), and Thomas J. Papadimos, MD (Professor and Associate Dean, University of Toledo, College of Medicine, Toledo, Ohio, US)

In series: Health Care in Transition
Hardcover: 978-1-53615-729-1, $230.00.

Welcome to Fundamentals of Leadership for Healthcare Professionals, Volume 2. The editors are proud to present our readers with a significantly expanded book, featuring 14 chapters by a distinguished group of 40 academic authors with decades of collective leadership experience. Based on the success of Volume 1, the current book in our series seeks to expand into important new areas. This includes diverse topics such as resilient leadership; electronic medical record implementations; interviewing for leadership positions; effective management in the low-resource setting; academic affiliations; crisis leadership; care quality and patient safety; the importance of diversity in health-care; complexity theory and ethics; change management; exploration of the executive function-dysfunction spectrum; and many other related concepts. The current tome begins with an introductory chapter that provides an in-depth overview of various theoretical aspects of leadership, including the most commonly encountered leadership styles. Throughout the book the authors focus on practical relevance of the topics being discussed, presenting ‘lessons learned’ and stressing the importance of flexible, authentic, servant leadership. The editors hope that Volume 2 of the Fundamentals of Leadership for Healthcare Professionals will be equally, or perhaps even more successful than Volume 1, and that it will provide an excellent springboard for Volume 3 in this important and unique book series!

Lactate Dehydrogenase (LDH): Biochemistry, Function and Clinical Significance
Reshma Rani and Vinit Kumar (Amity Institute of Biotechnology, Amity University Noida, Noida, Uttar Pradesh, India) and Vinit Kumar (Amity Institute of Molecular Medicine and Stem Cell Research, Amity University Noida, Uttar Pradesh, India)

In series: New Developments in Medical Research
2019. 244 pp.
Hardcover: 978-1-53615-104-6, $160.00.
The book entitled “Lactate Dehydrogenase (LDH): Biochemistry, Functions and Clinical Significance” provides a broad and authoritative review of the lactate dehydrogenase enzyme, including its isoforms, catalytic functions, distribution in various tissues, involvement in cancer cell metabolism and tumorigenesis, involvement in the plasmodium enzyme, various small molecule inhibitors of hLDH and pLDH, and clinical significance. Recent research and review articles are included to improve the book’s significance in the area of research, particularly in cancer treatment, diagnosis, and drug discovery. Although the chapters can be read independently from one another, the whole book is arranged in seven chapters for the convenience of the reader. The first chapter covers the importance of the hot topic, LDH targets, and the second chapter provides an overview of LDH and its involvement in cancer cell metabolism. The third chapter provides the various isoforms of LDH and the basics of catalytic functions of LDHA. All three chapters can serve as an introduction for those who are new to the research area of LDH. Chapters four and five deliver an overview of various small molecules as inhibitors of hLDHA and pLDHA, respectively. These two chapters are useful to the researcher working in the fields of drug design and drug discovery in the areas of cancer and malaria research. The last two chapters focus on the importance of LDH as a biomarker, and its importance in disease
diagnosis and prognosis in clinical settings. All of the chapters discuss the latest research findings that have occurred over the last few years. Bringing all the information together in one major reference, the authors systematically reviewed and summarized these recent research findings, providing an in-depth understanding of the role of LDH and its applications in research and clinical practice. Readership: Overall, this book is a complete package for graduates, students, and researchers providing basic information about LDH, and its importance in research and clinical settings. This book is helpful to the researcher engaged in the fields of LDH, drug design and drug discovery, the development of biomarkers, disease diagnosis, and prognosis, etc.

**Medical Bioinformatics and Biochemistry (Diabormatics)**

*Rajneesh Prajapat, Ph.D. (Faculty of Medical Science, Department of Medical Biochemistry, Rama Medical College and Hospital, Rama University, Kanpur (U.P.) India) and Ijen Bhattacharya, M.D. (Faculty of Medical Science, Department of Medical Biochemistry, Rama Medical College and Hospital (NCR campus), Rama University, Kanpur (U.P.) India)*

In series: *Biochemistry Research Trends*


Softcover: 978-1-53614-952-4. $95.00.
e-book: 978-1-53614-953-1. $95.00.

The first edition of Medical Bioinformatics and Biochemistry (Diabormatics) explains how medical biochemistry and bioinformatics could be used as a tool for analyzing the research data related to disease diagnosis and treatment. Bioinformatics is an interdisciplinary approach that includes concepts of biotechnology, microbiology, molecular biology, medicine and forensic science. This book is based on the recent development in the research dynamics of medical bioinformatics, biochemistry and progress in these fields. The book provides reference material for students of medical and life sciences. The development in genomic sequencing and in silico biology has provided the data needed to accomplish comparisons of derived nucleotide and protein sequences. The results of analysis may be used to formulate and test hypotheses about biochemical function. This first edition provides readers with a practical guide covering the full scope of concepts in medical bioinformatics and biochemistry related to diabetes. The basic purpose of this book is for students of medical and life sciences to understand the research methods of biochemistry and bioinformatics. This includes storing, receiving, and analyzing data from databases using various in silico tools. This book is a useful source of knowledge for MBBS, B.Sc, M.Sc / M.D. / M.S. and Ph.D level students looking for an accessible introduction to the subject.

**Oxidative Stress and Antioxidant Defense: Biomedical Value in Health and Diseases**

*Md. Sahab Uddin (Department of Pharmacy, Southeast University, Dhaka, Bangladesh) and Aman B. Upaganlawar (Department of Pharmacology, SNJBs SSDJ College of Pharmacy, Maharashtra, India)*

In series: *New Developments in Medical Research*


Hardcover: 978-1-53615-687-4. $310.00.

Oxidative Stress and Antioxidant Defense: Biomedical Value in Health and Diseases represent current findings on the impact of oxidative stress on the pathogenesis of diseases and underlying mechanisms of antioxidants influencing health and disease processes. This book is divided into seven sections that describe how antioxidants defend oxidative stress-mediated diseases as well as recent developments, future opportunities, and challenges. Sections 1 analyzes the role of oxidative stress in aging and associated diseases as well as the use of antioxidants in health maintenance, preventing and repairing injuries caused by oxidative stress. Section 2 represents the status of various antioxidants in cigarette smoking and antioxidant defense against exercise-induced oxidative stress. Section 3 focuses on the effect of oxidative stress in the pathogenesis of neurodegeneration and the existing status of antioxidant therapy. Section 4 covers the impact of oxidative stress at different levels of chronic degenerative diseases, as well as treatment with antioxidants to revert and diminish the cellular injury. Section 5 offers the importance of antioxidants in abating the pathological processes involved in hypertension and stroke. Section 6 presents the complexity associated with oxidative stress and metabolic disorders as well as the potential of antioxidants used in amelioration of related pathologies. Section 7 discusses the antioxidant defense against oxidative stress-mediated erectile dysfunctions and the significance of antioxidants in pregnancy. This book represents the copious set of specific research updates and diaphanous understanding of oxidative stress-mediated cellular damages and role of antioxidants in disease.
processes from experienced and eminent academicians, researchers, and scientists from throughout the world. This book is suitable for professionals, academicians, students, researchers, scientists and industrialists around the world in the biomedical, health, and life science fields.

Palliative Care: The Role and Importance of Research in Promoting Palliative Care Practices: Reports from Developed Countries, Volume 2

*Michael Silbermann (Middle East Cancer Consortium, Haifa, Israel)*

In series: *New Developments in Medical Research*


Hardcover: 978-1-53616-199-1. $230.00.


The incidence of cancer is alarmingly increasing worldwide. The major problem that the medical profession is currently facing refers to “late presentation” patients who, for the most part, have reached the terminal stage of the illness. For these people, the only treatment option left is palliative care. Various patterns of palliation have been in practice in every culture and in every ethnic group for generations. Unfortunately, we still lack significant and sustained investment in research related to the practice of palliative care. Authors from around the globe seek more investment of public and private funds to investigate ways to improve the bedside practice of palliative care. Modern palliative care concepts were established by Dame Cicely Saunders, from London, UK, right after World War II. It is only in the past 15 to 20 years that this new discipline started to develop in the developing world. However, we still lack the essential basic biological processes involved in relieving the suffering of cancer patients while receiving palliative measures throughout the trajectory of the disease. This book owes its origins in large measure to physicians and nurses in 30 countries globally, who decided to devote their time, energy, compassion and goodwill, to the promotion of palliative care in their countries and communities, yet they lack solid evidence-based data to rely upon while extending their treatment to both patients and family members. The goal, in part, is to bridge the gap between scientists and clinicians from developed countries and those in developing countries. We have been aware of the variances between cultures, traditions, beliefs and practices. I am continually struck by the seemingly diametrical views of “knowing” and cultures and the strong overlaps that might give rise to new ideas. We hope that these new volumes will serve to inspire health professionals’ and administrators’ interests and appreciation for the investment in basic and clinical research that will serve to advance our understanding of the underlying physical and emotional factors involved while extending palliative care to patients suffering from cancer and other non-communicable illnesses.

Palliative Care: The Role and Importance of Research in Promoting Palliative Care Practices: Reports from Developing Countries, Volume 3

*Michael Silbermann (Middle East Cancer Consortium, Haifa, Israel)*

In series: *New Developments in Medical Research*

2019.

Hardcover: 978-1-53616-211-0. $230.00.


The incidence of cancer is alarmingly increasing worldwide. The major problem that the medical profession is currently facing refers to “late presentation” patients who, for the most part, have reached the terminal stage of the illness. For these people, the only treatment option left is palliative care. Various patterns of palliation have been in practice in every culture and in every ethnic group for generations. Unfortunately, we still lack significant and sustained investment in research related to the practice of palliative care. Authors from around the globe seek more investment of public and private funds to investigate ways to improve the bedside practice of palliative care. Modern palliative care concepts were established by Dame Cicely Saunders, from London, UK, right after World War II. It is only in the past 15 to 20 years that this new discipline started to develop in the developing world. However, we still lack the essential basic biological processes involved in relieving the suffering of cancer patients while receiving palliative measures throughout the trajectory of the disease. This book owes its origins in large measure to physicians and nurses in 30 countries globally, who decided to devote their time, energy, compassion and goodwill, to the promotion of palliative care in their countries and communities, yet they lack solid evidence-based data to rely upon while extending their treatment to both patients and family members. The goal, in part, is to bridge the gap between scientists and clinicians from developed countries and those in developing countries. We have been aware of the variances between cultures, traditions, beliefs and practices. I am continually struck by the seemingly diametrical views of “knowing” and cultures and the strong overlaps that might give rise to new ideas. We hope that these new volumes will serve to inspire health professionals’ and administrators’ interests and appreciation for the investment in basic and clinical research that will serve to advance our understanding of the underlying physical and emotional factors involved while extending palliative care to patients suffering from cancer and other non-communicable illnesses.
in good ecological balance with health and well-being. Moving toward the promise of a positive future for our planet, the authors advise that health disparities must be terminated in order to benefit the children who live in communities where environmental hazards are related to circumstances of social and economic disadvantage. Each student on children’s health, development, and education. The target populations are Georgia State University, Atlanta, Georgia, USA; School of Public Health, Scopus Campus, Jerusalem, Israel; Division of Pediatrics, Hadassah Hebrew University Medical Centers, Mt Scopus Campus, Jerusalem, Israel; School of Public Health, Georgia State University, Atlanta, Georgia, US).

Phytochemicals: Plant Sources and Potential Health Benefits
Iman Ryan
In series: Plant Science Research and Practices
The opening chapter of Phytochemicals: Plant Sources and Potential Health Benefits discusses macronutrients and micronutrients from plants along with their benefits to human health. An overview of the mechanisms of action underlying the potential roles of dietary soybean isolavones including daidzein, genistein, and equol that may have benefits in dyslipidemia, ischemic heart disease, blood pressure, diabetes, cancer, and osteoporosis is discussed in the next chapter. In one study, the authors seek to scientifically validate the hypoglycaemic effects of crude aqueous extracts from Vitex payos fruits on both normal and alloxan-induced diabetic rats. Additionally, the authors discuss the literature results obtained in the identification and quantification of rosmarinic acid and its derivatives in Lamiaceae family plants, as well as explore recent advances in the nanoencapsulation of rosmarinic acid. This compilation goes on to report several aspects of the chemical composition and biological activity of species of Smilax found in Brazil. Smilax fluminensis is a dioecious liana with a great capacity for shoot formation in soil and primary branch formation in subsoil. As such, phytochemical studies on this plant are reviewed. Phytochemical aspects and biological activities of the species S. brasiliensis are also examined. To continue the discussion, the authors investigate the allelopathic, cytotoxic, genotoxic and larvicidal potential of methanol and petroleum ether extracts from S. brasiliensis leaves, as well as the effects of their fatty acids and methyl esters. Furthermore, the authors synthesize phytochemical aspects and biological activity of Tecoma stans (L.) species. In the penultimate chapter, the authors discuss P. venusta, and the way in which compounds obtained from this plant can be used as functional foods, drugs or precursors for the semi-synthesis of drugs. The objective of the concluding chapter is to present the ethnopharmacological, biological activities and phytochemical aspects of the Limoniastrum fei species growing in the Algerian Sahara.

Public Health: Environment and Child Health in a Changing World
I. Leslie Rubin, MD (Department of Pediatrics, Morehouse School of Medicine and President, Institute for the Study of Disadvantage and Disability, Atlanta, GA, USA) and Joav Merrick, MD, MMedSci, DMSc, (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel; Division of Adolescent Medicine, KY Children’s Hospital, Department of Pediatrics, Lexington, Kentucky, USA; National Institute of Child Health and Human Development, Jerusalem, Israel; Division of Pediatrics, Hadassah Hebrew University Medical Centers, Mt Scopus Campus, Jerusalem, Israel; School of Public Health, Georgia State University, Atlanta, Georgia, US).

In series: Public Health: Practices, Methods and Policies
Edited by: Joav Merrick (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
 Hardcover: 978-1-53615-394-1. $230.00.
Break the Cycle of Children’s Environmental Health Disparities (BTC) is an annual, collaborative, interdisciplinary research and training program involving university students in academic tracks that focus on the impact of adverse social, economic, and environmental factors on children’s health, development, and education. The target populations are communities where environmental hazards are related to circumstances of social and economic disadvantage. Each student develops a project that focuses on preventing or reducing adverse environmental factors to benefit the children who live in these communities. At the end of the project, the students present their studies and findings at a national conference and write papers that are then published. This book is the result of the 13th BTC projects. The projects cover a range of factors that have an influence on individual, community, and social perspectives. Most importantly, they inform us about children’s environmental health disparities, and propose solutions to reduce and eliminate health disparities in order to promote health equity for all children. The authors also cover a brief history of human habitation and the associated environmental degradation, accompanied by what has been done to address the process. They recommend a constructive approach to breaking the cycle of environmental degradation, moving toward the promise of a positive future for our planet in good ecological balance with health and well-being for generations to come.
Sensory Integration: Development, Disorders and Treatment
Izabela Bieńkowska, Ph.D. (University College of Social Sciences and Foreign Languages, Silesian University of Technology, Poland)

In series: New Developments in Medical Research
Softcover: 978-1-53615-454-2. $95.00.
This book attempts to address and answer questions about different types of disorders in particular developmental spheres in children with learning and behavioral problems. It suggests how a child with sensory integration disorders can be helped in therapy and via other means using methods supporting disturbed sensory integration and other methods supporting the child’s development.

Toward Precision Assessment and Psychotherapy: Understanding Individual Differences through Neurobiology, Genetics, and Epigenetics
Thomas G. Arizmendi, PhD (Clinical Psychologist, Longmont, CO, US)

In series: New Developments in Medical Research
2020.
Hardcover: 978-1-53616-536-4. $230.00.
“Toward Precision Assessment and Psychotherapy: Understanding Individual Differences through Neurobiology, Genetics, and Epigenetics” provides a transformative approach to the understanding of mental health in the 21st century. It does so by encouraging the replacement of traditional subjective techniques with more precise and objective measures that are designed to discover individual differences in our patients. Just as in personalized medicine, where diagnostic and treatment techniques are becoming more targeted toward the specific conditions of a particular patient, so to in the mental health field we need to develop targeted and focused methods through the use of clinical science concepts and through the adoption of an agnostic, unassuming posture where the presentation of each patient is viewed as unique. For example, treatments may draw from an integrative approach that incorporates genomic and epigenomic analyses of the patient to inform a more targeted medication regimen or psychotherapy approach (some psychiatrists are beginning to use genomic analysis to aid in the choice of a specific antidepressant, for example, that would most likely be effective for a certain patient). Diagnostically, paper and pencil questionnaires leading to current diagnostic labels, long the standard, must be replaced, for the most part, by objective measures of stress that prioritize “reports from the body”. Additionally, research methods of extremely complex psychological disorders can be enhanced by breaking them down into smaller subtypes (or endophenotypes) versus large phenomenologically-based symptom clusters (i.e. DSM diagnoses). Individual differences, a consistent focus throughout the book, may be the product of genetic variants and/or epigenetic mechanisms. The latter mediate gene X environment interaction that is now the primary paradigmatic lens through which we investigate and seek to explain resultant behavioral profiles. A major focus of the book is on the effects of early adversity, particularly trauma, and how they contribute to a “re-programming” of the brain through epigenetic alterations of gene expression. This results in increased vulnerability to possible psychological disorders, such as various anxiety conditions, depression, and character disorders which may manifest later in life. By identifying the epigenetic effects caused by early stressors, that is, how gene expression is altered, we can eventually make significant advances in primary prevention. This book represents an attempt to move us into a transitional domain and beyond, where causes and the treatment of psychological disorders are re-conceptualized through our developing insights from neurobiology, genetics, and epigenetics.

Zeolites in Medicine: Current Achievements and Research of Zeolites in Medicine
Kresimir Pavelic and Sandra Kraljevic Pavelic (Juraj Dobrila University of Pula, Medical Faculty, Pula, Croatia and University of Rijeka, Department of Biotechnology, Rijeka, Croatia)

In series: New Developments in Medical Research
Softcover: 978-1-53616-050-5. $95.00.
e-book: 978-1-53616-051-2. $95.00.
The presented book is an easy-to-read and understandable text for experts in the medical field that are not familiar with the inorganic zeolite materials. The book is mostly meant as a guideline to doctors, pharmacists, medical professionals and general
public who do not have deep knowledge on zeolites and on potential of zeolites’ medical applications. The concepts and facts presented in the book are a comprehensive general compilation of data from available scientific literature focused on results from experiments with different zeolite materials on animals and humans. Some relevant topics covered within the book include clinoptilolite safety and toxicology in vivo and zeolite usage in animals and humans for detoxification purposes. Zeolites’ effects in vivo may be attributed to their specific structural properties, which make them interesting in a number of potential medical applications described in the book as well. Given that these materials are fascinating natural creations that are acknowledged as essential in many aspects of our lives, the purpose of this book is to present a collection of scientific facts about zeolites, to encourage medical professionals and scientists to seriously consider and study their applications in vivo to speed-up their usage in medicine as well as for improved human wellbeing.

### Alternative Therapies

**The Traditional Sakkiya Practice: A Public Health Issue in Northern Nigeria**

*Kehinde K. Kanmodi (Cephas Health Research Initiative Inc, Ibadan, Nigeria) and Joav Merrick, M.D. (Division of Adolescent Medicine, KY Children's Hospital, Department of Pediatrics, Lexington, Kentucky, USA)*

In series: Alternative Medicine, Health and Wellness

Edited by: Joav Merrick (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)


Softcover: 978-1-53614-763-6. $82.00.

e-book: 978-1-53614-764-3. $82.00.

Sakkiya is a Hausa word, which has its origin from the Hausa culture, and it means the act of using hot pointed metallic tip to puncture bodily swelling with the aim of achieving a curative effect. The Hausa culture is one of the three most popular cultures in Nigeria. The Hausas are predominantly located in the northwestern geopolitical zone of Nigeria, predominantly working as farmers. The majority of the Hausa people practice the Islamic religion. Encounters from the medical setting with cases of complications arising from failure of Sakkiya treatment, where some patients did not survive this treatment made investigation into this form of alternative medicine a paramount issue. In order to fill the void of information and literature on Sakkiya treatment, the authors embarked on a literature search and field studies resulting in this book. The authors found a lack of historical evidence concerning the old traditional Sakkiya practice, and therefore urge archaeologists, anthropologists, sociologists and historians to investigate into the historical evolution of Sakkiya practice in northern Nigeria. Kehinde Kanmodi, BDS, ACIPM, AISQEM is a dental surgeon, lecturer, multidisciplinary researcher, and manager affiliated with Cephas Health Research Initiative Inc, Ibadan (head office), Community Health Officers’ Training Programme, Usmanu Danfodiyo University Teaching Hospital, Sokoto, National Teachers’ Institute, Department of Political Science of the National Open University of Nigeria, Abuja, Nigerian Institute of Management, Abuja, Chartered Institute of Project Management, Lagos, and Dental Clinic, Kebbi Medical Centre, Kalgo, Nigeria. Joav Merrick, MD, MMedSci, DMSc, born and educated in Denmark is professor of pediatrics, child health and human development affiliated with the Division of Pediatrics, Hadassah Hebrew University Medical Center, Mt Scopus Campus, Jerusalem, Israel, Kentucky Children’s Hospital, University of Kentucky, Lexington, United States and professor of public health at the Center for Healthy Development, School of Public Health, Georgia State University, Atlanta, United States, the former medical director of the Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem and the founder and director of the National Institute of Child Health and Human Development in Israel.

### Veterans and Military Medicine and Health

**Improvements Needed in the VA Health Care System**

*Charles Copeland*

In series: Military and Veteran Issues

In series: Health Care in Transition


Hardcover: 978-1-53615-971-4. $230.00.


Nearly 40,000 providers hold privileges in VHA’s 170 VA Medical Centers (VAMCs). VAMCs must identify and review any concerns that arise about the clinical care their providers deliver. Chapter 1 examines, among other things, selected VAMCs’ reviews of providers’ clinical care after concerns are raised and VHA’s oversight of these reviews, and VAMCs’ reporting of providers to the NPDB and SLBs and VHA’s oversight of reporting. Chapter 2 summarizes the
implementation and oversight of VHA processes for reviewing and reporting providers after quality and safety concerns have been raised at selected VA medical centers. Veterans suffer a disproportionately higher rate of suicide than the civilian population. Chapter 3 focuses on the extent to which VHA conducts activities for its suicide prevention media outreach campaign, and evaluates the effectiveness of its campaign. The Faster Care for Veterans Act of 2016 called for the Department of Veterans Affairs (VA) to conduct a pilot program under which veterans can use an Internet website or mobile application to schedule and confirm appointments at the department’s medical facilities. Chapter 4 examines the extent to which VHA conducts activities for its suicide prevention media outreach campaign, and evaluates the effectiveness of its campaign. VAMCs use reusable medical equipment (RME) which must be reprocessed—that is, cleaned, disinfected, or sterilized—between uses. Improper reprocessing of RME can negatively affect patient care. To help ensure the safety of veterans, VHA policy establishes requirements VAMCs must follow when reprocessing RME and requires a number of related oversight efforts. Chapters 5 and 6 discuss VHA’s oversight of VAMCs’ adherence to RME policies and challenges VAMCs face in operating their Sterile Processing Services programs, and any efforts by VHA to address these challenges. VHA has designated patient advocates at each VAMC to receive and document feedback from veterans or their representatives, including requests for information, compliments, and complaints. Chapter 7 examines the extent to which VHA has provided guidance on the governance of the program; provided guidance on staffing the program; assessed the training needs of patient advocates and monitored training completion; and monitored patient advocacy program data-entry practices and reviewed program data. Community-based outpatient clinics (CBOC) are an important part of the Department of Veterans Affairs’ (VA) Veterans Health Administration (VHA) health care delivery system. These clinics are geographically separate from VA medical centers (VAMC) and provide outpatient services, including primary care and mental health care. Chapter 8 reviews VHA’s use of contracts to carry out core functions. Selected Department of Veterans Affairs’ (VA) medical centers (VAMC) use generally similar approaches for managing their pharmacy inventories. Chapter 9 describes approaches selected VAMCs use to manage their pharmacy inventories and assesses the extent to which VA oversees VAMCs’ efforts to manage their pharmacy inventories. The Veterans Health Administration (VHA) has made progress improving opioid safety through its Opioid Safety Initiative (OSI). Chapter 10 examines the extent to which VHA has met OSI goals established in 2014 and (2) the extent to which VHA providers adhere to key opioid risk mitigation strategies.

Military Benefits: Employment, Medical Care and Retirement
Cooper Poidevin
In series: Military and Veteran Issues
The National Defense Authorization Act for Fiscal Year 2018 included a provision “to assess the panoply of benefits and programs available government-wide to separating servicemembers intended to provide the skills and education necessary for such members to achieve meaningful and fulfilling employment in their civilian lives.” Chapter 1 describes the comprehensive inventory of federal programs providing assistance to servicemembers, veterans, and their families—including information from the administering agencies on who is eligible to receive services, the programs’ objectives, and the available services. Chapter 2 provides a general discussion of legislative provisions and proposals relating to the military benefits for former spouses. Chapter 3 contains information on locating military unit histories and individual service records of discharged, retired, and deceased military personnel. Military medical care is a congressionally authorized entitlement that has expanded in size and scope since the late 19th century. Chapter 4 answers selected frequently asked questions about military health care. Chapter 5 discusses the standards and procedures governing the disposition of medical malpractice claims that servicemembers and non-servicemembers assert against the United States, as well as pertinent considerations for Congress. DOD has taken steps to modernize its Military Health System to ensure that it operates efficiently. Chapter 6 assessed the extent to which the services use validated dental clinic staffing models that also incorporate cross-service staffing standards, and have recruited and retained military dentists and measured the effectiveness of their recruitment and retention programs. The Survivor Benefit Plan (SBP), enacted in 1972, provides cash benefits to a surviving spouse or other eligible recipient(s) of a retiree or deceased member of the uniformed services. Chapter 7 describes the categories of beneficiaries eligible for survivor benefits under the military Survivor Benefit Plan (SBP), the formulas used in computing the income level (including the integration of SBP benefits with other federal benefits), and the costs of SBP participation incurred by the retiree and/or the beneficiary. Chapters 8 and 9 provide information on the military retirement system.
Case Report in Surgery
Ahmad Jabir Rahyussalim (Faculty of Medicine Universitas Indonesia, Kecamatan Senen, Kota Jakarta Pusat, DKI Jakarta, Indonesia), Ismail Hadisoebroto Dilogo, Achmad Fauzi Kamal and Aryadi Kurniawan

In series: Surgery - Procedures, Complications, and Results
2020.
Hardcover: 978-1-53616-582-1, $230.00.

This book covers the following on a wide variety of surgery cases such as general surgery, neurosurgery, orthopedic and traumatology, otolaryngology-head, and oncology. Other topics related to surgery in this volume include anesthesiology, oncology, and anatomical pathology. This book provides an authentic, fresh, and educational case in each section. The purpose of this book is to contribute some perspective on basic science and clinical evidence of unusual case, which will give educational benefit to our readers. In addition, this volume is designed to meet the demand of practitioners to face challenging and unexpected cases in the surgical field, which readers will find very helpful. This valuable book contains 38 real cases in surgery. Access to case scenario is given at the beginning, followed by physical examination, differential diagnosis, and management in surgery. We emphasize in evidence-based medicine to expand the knowledge of surgical education and practice. The explanation was conducted understandably, and key learning points were summed up to help the readers. We believe that our readers will find this text, written by our best practitioners and specialists, very informative and useful.

Liver Steatosis and Bariatric Surgery
Jaime Ruiz-Tovar, MD, PhD (Department of Bariatric Surgery, Centro de Excelencia para el Diagnostico y Tratamiento de la Obesidad, Valladolid, Spain; Professor of Surgery, Universidad Alfonso X, Madrid, Spain; Department of Surgery, Universidad Autónoma de Madrid, Spain; Obesity Unit, Garciálos Clinic, Madrid, Spain; Department of Surgery. Centro de Excelencia para el Estudio y Tratamiento de la Obesidad, Valladolid, Spainl Department of Surgery, University Hospital Rey Juan Carlos, Mostoles, Madrid, Spain), and Lorea Zubiaga, MD, PhD (Inserm U1190, Lille 2 University, Lille, France; Hospital General Universitario de Elche and Universidad Miguel Hernández de Elche, Elche-Alicante, Spain)

In series: Surgery - Procedures, Complications, and Results
2020.
Hardcover: 978-1-53616-444-2, $160.00.

Liver steatosis or nonalcoholic fatty liver disease (NAFLD) is a progressive disorder characterized by the fat accumulation in the parenchyma of the liver. The progressive form of NAFLD called nonalcoholic steatohepatitis (NASH) is the advanced condition that shows different grades of fibrosis, which could progress to cirrhosis, hepatocellular carcinoma and liver-related morbidity and mortality. Bariatric surgery gains attention as a potential treatment for liver steatosis because different studies revealed an improvement in 90% of cases of fatty liver after surgery. The improvement occurred within the first year and persisted up to five years. Pathogenic mechanisms that are involved in the evolution steatosis are intimately connected with insulin resistance, type 2 diabetes (T2D) and the metabolic syndrome. Bariatric surgery is a powerful treatment to ameliorate all these conditions. The aim of this book is to update the actual evidence about liver steatosis, non-alcoholic fatty liver disease and non-alcoholic steatohepatitis in morbidly obese patients, the diagnostic methods and the evolution after the different techniques of bariatric surgery.
Prophylaxis of Surgical Site Infection in Abdominal Surgery
Jaime Ruiz-Tovar, MD, PhD (Department of Bariatric Surgery, Centro de Excelencia para el Diagnostico y Trataamiento de la Obesidad Valladolid-Spain, Professor of Surgery, Universidad Alfonso X, Madrid, Spain; Department of Surgery, Universidad Autónoma de Madrid, Spain; Obesity Unit, García-Clinic, Madrid, Spain; Department of Surgery. Centro de Excelencia para el Estudio y Tratamiento de la Obesidad, Valladolid, Spain; Department of Surgery, University Hospital Rey Juan Carlos, Mostoles, Madrid, Spain), and Andé Garcia-Marin, MD, PhD (Department of Surgery, Hospital Universitario San Juan de Alicante, Alicante, Spain; Professor of Surgery, Departamento de Patología and Surgery, Universidad Miguel Hernández, Elche, Alicante, Spain)

In series: Surgery - Procedures, Complications, and Results

Sofcover: 978-1-53615-615-7. $95.00.
e-book: 978-1-53615-616-4. $95.00.

Surgical site infection (SSI) is one of the most frequent complications after abdominal surgery as abdominal procedures are often clean-contaminated, contaminated or even dirty procedures, so long the gastrointestinal tract, plenty of microorganisms, is entered. SSI is associated with morbidity and mortality, and reduces the patients' quality of life after surgery. Moreover, it prolongs hospital stay and requires increased instrumentation, medication and complementary tests, altogether representing an economic burden for the Health Services. This has led to the development of several Guidelines and Consensus documents, including prophylactic measures to prevent SSI. Different scientific societies, including the World Health Organization (WHO), the Center for Disease Control (CDC), the American College of Surgeons (ACS) and the Surgical Infection Society (SIS), have published recommendations for the prevention of SSI in the last years. All the documents agree with most of the recommendations. However, the evidence grade of these recommendations is often low to moderate and with the aim to generalize these measures to all the surgical procedures, the extrapolations lead to a lowered evidence power. Thus, in some cases the force of the recommendations is based on the opinion of experts in the field.

Surgical Treatment of Femoral Neck Fractures (CD Included)
Orlin Filipov, M.D., Ph.D. (Head of Orthopedic Department, Vitosha Hospital Simeonovsko, Sofia, Bulgaria)

In series: Surgery - Procedures, Complications, and Results

In series: Orthopedic Research and Therapy

e-book: 978-1-53614-286-0. $230.00.

While arthroplasty is the preferred treatment for most elderly patients with displaced femoral neck fractures, internal fixation is the treatment of choice in the majority of patients below the age of 65 as a joint-preserving procedure. The osteosynthesis of fractures of the femoral neck in the elderly has been partly abandoned during the last years due to the poor clinical outcomes following the conventional fixation with parallel screws or DHS. Based on clinical evidence and laboratory testing, the novel method of biplane double-supported screw fixation (BDSF) offers much better fixation stability, reflecting in excellent clinical outcomes. With its innovative biomechanic principle, the BDSF method provides supreme stability for cannulated screw fixation, achieving up to 44% higher axial fixation strength in vitro, and a rate of bone union reaching up to 96.6% in clinical practice, which is much higher than the conventional parallel screw fixation data. The method of BDSF provides supreme stability by buttressing two out of three medially diverging cannulated screws on the inferior femoral neck cortex and supporting the steeper inferior screw on the posterior femoral neck cortex. The two calcar screws are oriented in different coronal inclinations intended to provide constant fixation strength during different patient activities and load directions. Biomechanically, the most effective component is the inferior screw placed at an obtuse angle and supported on a large area along the inferior and posterior cortex of the femoral neck following its spiral anterior curve. Given the clinical outcomes, BDSF is the perfect technique for femoral neck fracture fixation, as the fracture healing rate is high at 96% with this approach. Therefore, BDSF is not only a treatment alternative to conventional fixation, but also a much better procedure. Thus, BDSF should be routinely applied, and conventional fixation gradually abandoned in clinical practice (this has been the approach in our institution over the last ten years). This book describes the full surgical technique of the method of BDSF for femoral neck fracture osteosynthesis; quality criteria and surgical
recommendations for successful BDSF implementation, according to the vast clinical experience of ten years with this highly effective method. A novel surgical approach for hip arthroplasty is described in this book. The current trends aimed at decreasing operative trauma and blood loss have not been entirely satisfied with respect to most of the standard approaches for hip arthroplasty. These surgeries are often associated with considerable blood loss and the necessity for restricting patients’ activities in the postoperative period due to impaired joint stability and risk of dislocations. This book describes the full surgical technique of the novel anatomical direct lateral approach for hip arthroplasty, aimed at decreasing blood loss, minimizing operative trauma, and optimizing joint stability. This technique is associated with minimal blood loss and high joint stability. Patients are allowed to perform activities within the normal range of motion and without any special restrictions in the early postoperative period. This book describes also the history of internal fixation in femoral neck fractures, as well as the biomechanics of femoral neck fracture osteosynthesis and the role of the implants.

**Uses of Electrical Stimulation for Digestive and Endocrine Surgeons**

*Jaime Ruiz-Tovar, M.D., Ph.D. (Department of Bariatric Surgery, Centro de Excelencia para el Diagnóstico y Tratamiento de la Obesidad, Valladolid, Spain)*

In series: *Endocrinology Research and Clinical Developments*


Softcover: 978-1-53615-036-0. $95.00.

e-book: 978-1-53615-037-7. $95.00.

The use of electrical stimulators with medical aims has increased exponentially in the last years. The uses are very different. Though the most widely known are referred to as the approaches performed by neurosurgeons, evidence has recently appeared, supporting its use by many other medical specialties. Electrical stimulation can be applied transcutaneously (TENS) or percutaneously (PENS). The target of electrical stimulation can be a nerve, inducing electric conductivity and finally acting over the innervated structure, which is activated, or starting a reflex with the involvement of the spinal cord. The stimulation can also act directly over a muscle, inducing a contraction. The effects of electrical stimulation are very diverse, ranging from the development of an artificial reflex and consequently activating the stomach, the pancreas or a sphincter, to a continuous muscular contraction, provoking hypertrophia of the structure and hyperfunction, or to the identification of a laryngeal recurrent nerve during a thyroidectomy, avoiding its damage. Moreover, electrical stimulation has been also used to reduce the feeling of pain, as the stimulation of somatic fibers somehow masks the transmission of nociceptive ones. The aim of this book is to revise the actual evidence about the different uses of electrical stimulation by digestive and endocrine surgeons.

**Vascular Surgery: Procedures, Complications and Recovery**

*Vladimir Sihotsky, MD, PhD (Department of Vascular Surgery, East Slovak Institute of Cardiovascular Diseases, Medical Faculty of Safarik University, Kosice, Slovakia)*

In series: *Surgery - Procedures, Complications, and Results*

2020.

Hardcover: 978-1-53616-454-1. $230.00.


The book “Vascular Surgery: Procedures, Complications and Recovery” was written by a team of vascular, cardiac and neurosurgeons working mainly in the East Slovak Institute of Cardiovascular Diseases, and also Luis Pasteur University Hospital in Kosice, Slovakia. The book is addressed to students of medicine and also as fundamental principles of vascular surgery for residents in different surgical specializations. Vascular surgery has been rapidly developing in recent decades. Although the first successful arterial reconstructions appeared the beginning of the 20th century, the active management of arterial diseases has developed since the 1950s when new techniques of arterial surgery had been established. The first attempts of vascular reconstructions were performed by Alexis Carrel, a French surgeon who was awarded the Nobel Prize in Medicine in 1912 for inventing modern vascular suture, which is used still today. Significant development of vascular surgery brought the introduction of prosthetic grafts by Vorhees in 1952. That enabled De Backey to resect abdominal aortic aneurysm and replace it with synthetic graft in 1955. The first angiography with the catheter was performed by Seldinger in 1952, and Gruntzig in 1974 was the first who did percutaneous transluminal angioplasty and started the modern era of endovascular treatment. Since this time, an essential development in the treatment of vascular diseases has been observed. Nowadays, vascular surgeons solve the most severe cases of arterial diseases, solve complications of endovascular therapy, or are a part of hybrid procedures, which are a combination of surgical and endovascular treatment. In the first chapter, elementary clinical examinations, imagine methods, and also surgical techniques are described. Aortic disorders that are the most severe vascular diseases are analysed in the second, third, and forth chapters. Open aortic surgery is technically the most difficult part of vascular surgery and is associated with the highest mortality. Open aortic surgery is now being replaced by endovascular procedures due to lesser invasivity and mortality. The fifth chapter is dedicated mainly to surgery of carotid arteries. Stenosis of the internal carotid artery is one of the reasons for stroke. Carotid
endarterectomy that removes atherosclerotic plaque from the carotid bifurcations is effective in preventing stroke in patients with stenosis of the internal carotid artery. The sixth chapter analyses the problem of surgery of peripheral arteries as peripher al arterial occlusive disease or acute limb ischemia. Both conditions can lead to major amputations and life long disability. The seventh chapter analyzes vascular trauma that may lead to severe bleeding or limb ischemia; both situations require almost immediate diagnosis and treatment. Peripheral artery trauma is treated mainly by open surgery, while the treatment of aortic injury is mostly endovascular. Basic types of vascular access and problems of venous disorders are described in the eighth chapter. Venous diseases are not so life threatening but much more common compared to arterial. The last chapter deals with complications and recovery that is inevitable from an excellent surgical outcome.

**WOMEN’S HEALTH**

Mastitis: Symptoms, Triggers and Treatment
Tapas Kumar Sar (Head, Department of Veterinary Pharmacology and Toxicology, West Bengal University of Animal and Fishery Sciences, Kolkata, West Bengal, India)
In series: New Developments in Medical Research
2019.
e-book: 978-1-53616-125-0. $230.00.
Mastitis is the most widespread and economically important disease of dairy cattle occurring throughout the world. It is of particular concern for farmers in developing countries like India. The economic loss due to mastitis is associated with reduced milk production, discard of milk due to antibiotic residues, treatment and management costs, and occasional deaths. The menace has a serious zoonotic threat due to shedding of bacteria and their toxins through the milk. Mastitis is caused by a wide spectrum of pathogens and, it is categorized into contagious and environmental mastitis. The major contagious pathogens include Staphylococcus aureus, Streptococcus agalactiae, Mycoplasma spp. and Corynebacterium bovis. The environmental mastitis can be induced by those pathogens residing in the environment such as E. coli, Klebsiella spp., Streptococcus dysgalactiae and Streptococcus uberis. On the basis of symptoms, mastitis can be classified into either clinical or sub-clinical. Clinical mastitis is characterized by sudden onset, alterations of milk composition and appearance, decreased milk production, and the presence of the cardinal signs of inflammation in the udder. In contrast, in sub-clinical mastitis, no cardinal signs are detected although the milk production is decreased and the somatic cell count is increased. The diagnosis of sub-clinical mastitis is a real challenge in the dairy industry. The book contains a total of 7 chapters including a research chapter (chapter 6) for control of mastitis, a global problem with public health menace. Persons associated with antimicrobial stewardship and drug control policies may go through chapters 5 and 7 for getting some suggestions and clarifications for their consideration. The use of propolis for mastitis control is an innuendo for the selection for antimicrobial resistant strains. Propolis ethanol extracts showed a good bactericidal activity against mastitis pathogens as well as the capacity to inhibit biofilm formation and to disrupt established biofilm. These results strongly suggest that propolis may be part of a mastitis control strategy. The present book is a comprehensive attempt to cover the relevant topics of bovine mastitis such as physiology of milk secretion with associated biomarkers, immune responses of udder, updated etiology, current trends in conventional treatment and management, prospect of herbal preparations and propolis as supportive treatment options. The book will cater the need of the veterinary/dairy science/one health students, professionals, researchers and moreover, the progressive farmers who wish to understand the basics of the menace. Any suggestions from any corner for the improvement of the book will be gladly acknowledged.

Maternal Health: Global Perspectives, Challenges and Issues
Juan Sims
In series: Women’s Issues
2020.
Softcover: 978-1-53616-528-9. $82.00.
e-book: 978-1-53616-529-6. $82.00.
In this compilation, the authors present a framework for exploring coupled physical-social systems impacts on health. Specifically, this system is used to articulate three impact pathways for maternal health: vectorborne diseases, water, sanitation, and hygiene, and nutrition. Following this, Maternal Health: Global Perspectives, Challenges and Issues move beyond discussing the implications of maternal obesity on maternal and child health and focus on why it is imperative to consolidate current evidence into practice and policy around prevention. The authors explore what is needed to translate findings from epidemiological, clinical trial, secondary research and evidence synthesis into evidence-based programs. The concluding study analyzes data on disparities in maternal mortality by race, age and causes of death in the interest of identifying whether pregnancy-related deaths may be avoided in preventable conditions if treated earlier, thereby closing the racial disparities of maternal mortality rates in the United States.
Mother, Nurse, and Infant: A Manual Especially Adapted for the Guidance of Mothers and Monthly Nurses
S. P. Sackett
In series: *Pregnancy and Infants: Medical, Psychological and Social Issues*
In series: *Women's Issues*
The object of the author in writing this volume is to offer to nurses, and especially to those women who desire to make “monthly nursing” a vocation, the instruction which they need for that purpose. The book is written under a firm conviction in the mind of the author that a work of this character is needed at the present time—a work that combines some information to the monthly nurse in regard to her peculiar duties with considerable instruction in midwifery. He has learned during the forty-five years that he has practiced medicine in a small city and its vicinity, that mother and nurse are often combined in the same person. The important duty of nursing the sick is so generally performed by mothers, that they also, as a class, require some scientific knowledge to be acquired by means of plain, practical instruction. And, in fact, throughout our country, every mother is liable, in an emergency, to be called upon to fill the office of an accoucheur.

Perinatal Mental Health: Clinical Management Handbook
Yoshiyuki Tachibana MD, PhD (Department of Psychosocial Medicine, National Center for Child Health and Development, Setagaya-ku, Tokyo, Japan)
In series: *Women’s Issues*
Softcover: 978-1-53615-774-1. $82.00.
e-book: 978-1-53615-775-8. $82.00.
Mental health problems often occur in perinatal periods. Mothers’ mental health problems can cause parenting impairment and affect family health problems (e.g. child behaviors, cognitive development and physical health). To avoid those problems, early detection and early intervention for mothers’ mental health problems are pivotal. Maternal mental health problems in perinatal periods are cared by many professionals; e.g., obstetrician, midwives, nurses, pediatricians, public health nurses, and psychiatrists. This book mentions how to manage mental health problems in perinatal periods from the view point of various professional views. I sincerely hope this book will help cares for maternal and child health service professionals.

Uterine Fibroids: Epidemiology, Symptoms and Management
Simone Ferrero, MD, PhD (Academic Unit of Obstetrics and Gynecology, Ospedale Policlinico San Martino, Largo R. Benzi, Genoa, Italy; Department of Neurosciences, Rehabilitation, Ophthalmology, Genetics, Maternal and Child Health (DiNOGMI), University of Genoa, Italy) and Fabio Barra, MD (Academic Unit of Obstetrics and Gynecology, Ospedale San Martino, Genoa, Italy; Obstetrics and Gynecology, Dept. of Neurosciences, Rehabilitation, Ophthalmology, Genetics, Maternal and Child Health (DiNOGMI), University of Genoa, Italy)
In series: *Human Reproductive System - Anatomy, Roles and Disorders*
In series: *Women’s Issues*
Uterine myomas are the most common form of benign uterine tumors, occurring in 50–60% of women. Clinically, they are mostly asymptomatic, often incidentally found on pelvic examination or by routine gynecological ultrasonographic evaluation; otherwise, in 30–40% of cases, they cause a large variety of symptoms, depending on their location and size. Currently, the therapeutic options for myomas are medical, radiological, and surgical. The aim of this book is to summarize the evidence regarding epidemiology, pathogenesis, clinical presentation, diagnosis and management of uterine myomas.
Women’s Pearls
Sabina Fink, MD (BronxCare Health System, Mount Sinai Health System, Bronx, NY, US) and Panagiota Korenis, MD (Residency Director, Department of Psychiatry, Bronx Lebanon Hospital, Bronx, NY, US)
In series: Mental Illnesses and Treatments
In series: Women’s Issues
 Hardcover: 978-1-53616-103-8. $160.00.

Women’s Pearls is a homage to women, as well as provides clinical pearls written by psychiatrists for clinicians and non-clinicians alike. Mental health as it relates to women is described throughout the chapters of this book. This book represents up-to-date information that can be used as a reference or as a study guide to understand clinical treatment for perinatal mental health. The book demonstrates the history and current understanding of women’s mental health. A thorough description of mental health, wellness, diagnosis and treatment recommendations are seen throughout the chapters. Summarized highlights are depicted in each chapter in a form of a table. This book is an excellent learning tool for understanding women’s health. It can be used as a self-health book to understand mental health as it relates to women. This book is a review for mental health workers, physicians, residents and students.
SCIENCE AND TECHNOLOGY
New Developments in Agricultural Research
Patrik Blanchard
In series: Agriculture Issues and Policies
Softcover: 978-1-53615-363-7. $95.00.
New Developments in Agricultural Research provides a comprehensive introduction and overview of portable MMSs applied to agricultural and forestry, to highlight the potentialities and challenges of this novel technology in this specific application field. The application of these systems for dendrometric parameters is presented, as well as a review about their applications. The authors discuss the issue of how to assess the sustainability of farms, one of the most topical for researchers, farmers, investors, administrators, policymakers, interest groups, and the public at large around the globe. A practical and holistic approach is suggested for assessing the sustainability of farms in Bulgaria. The closing chapter examines farm-size and partial food availability relationships as well as modern technology adoption, and provides a detailed account of constraints faced by farmers in producing food from farming operations.

Land Management

The Farm Bill: Current Law, Budget Issues and Legislative Actions
Billie Grant
In series: Congressional Policies, Practices and Procedures
Congress has been active in establishing federal policy for the agricultural sector on an ongoing basis since the 1930s. Over the years, as economic conditions and technology have evolved, Congress has regularly revisited agricultural policy through periodic farm legislation. Over these decades, the breadth of policy areas addressed through such farm bills has expanded beyond providing support for a limited number of agricultural commodities to include establishing programs and policies that address a spectrum of related areas, such as agricultural conservation, credit, rural development, domestic nutrition assistance, trade and international food aid, organic agriculture, and support for beginning and veteran farmers and ranchers, among others. Congress sets national food and agriculture policy through periodic omnibus farm bills. The 115th Congress has the opportunity to establish the future direction of farm and food policy because many of the provisions in the current farm bill expire in 2018. Chapter 1 provides a title-by-title summary of the policies and provisions in H.R. 2 and compares them with current law. The Trump Administration released its first full budget request on May 23, 2017. It proposes specific amounts for the FY2018 Agriculture appropriation as well as legislative changes to various mandatory spending programs, including those in the farm bill. Chapter 2 separates the President’s budget request into proposed changes for agriculture based on congressional jurisdiction. Over time, farm bills have tended to become more complicated and politically sensitive. As a result, the timeline for reauthorization has become less certain. Chapter 3 reports on the budget issues shaping the 2018 farm bill while chapter 4 examines the major legislative milestones for the last 12 farm bills covering 54 years. Three farm bills have contained an energy title: the 2002 farm bill, the 2008 farm bill, and the 2014 farm bill. For all three farm bills, the major energy programs expire and lack baseline funding. Chapter 5 presents data on 2014 farm bill budgetary authority for energy provisions, as well as the original budget authority for Title IX programs under the previous 2008 farm bill. The timing and consequences of expiration vary by program across the breadth of the farm bill. There are two principal expiration dates: September 30 and December 31. Chapter 6 reports on the possible consequences of expiration including minimal disruption (if the program is able to be continued via appropriations), ceasing new activity (if its authorization to use mandatory funding expires), or reverting to permanent laws enacted decades ago (for the farm commodity programs).
The Farm Bill: Review, Background, and the WTO
Katie M. Harrison
In series: Agriculture Issues and Policies

The farm bill is an omnibus, multi-year law that governs an array of agricultural and food programs. Although agricultural policies are sometimes created and changed by freestanding legislation or as part of other major laws, the farm bill provides a predictable opportunity for policymakers to comprehensively and periodically address agricultural and food issues. Chapter 1 reviews our current farm programs and discuss solutions for the upcoming 2018 bill. Chapter 2 provides background on each of the major titles of the current farm bill and previews of some of the potential issues that could factor into the debate. Every new farm bill involves some modification or replacement of existing farm programs. A key question likely to be asked of every new program is how it will affect U.S. commitments under the World Trade Organization’s (WTO’s) Agreement on Agriculture (AoA) and its Agreement on Subsidies and Countervailing Measures (SCM) as described in chapter 3.

Natural Resources

Algeria: Agriculture, Water Supply and Vegetation
El Hafid Nabti (Laboratoire de Maitrise des Énergies Renouvelables, University A/Mira, Faculty of Natural Science and Life, Department of Mircobiology, Bejaia, Algeria) and Hocine Abbaci (University of Bejaia, Laboratory of Mastery of Renewable Energies, Bejaia, Algeria)
In series: Agriculture Issues and Policies
Softcover: 978-1-53615-562-4. $82.00.
e-book: 978-1-53615-563-1. $82.00.

Specifically, this book features detailed information about tomato production, water supply and cork production compiled in three different chapters. Beside these fundamental topics covered in this book, important insights concerning uses of biological processes i.e. bioremediation are also provided. In total, five chapters are grouped into three sections namely: agriculture, water supply and vegetation as it is reflected in the book title. The first chapter provides a comprehensive and accessible overview of the production of one of the most important horticultural crops in the country: tomato. Nowadays and worldwide, there is a trend towards alternative agriculture. To meet the growing demand, many viable options need to be explored, and one of these is the use of seaweed extracts. The second chapter is provided to show the significance of “algae-bacterium” combination in the restoration of plant growth under heavy metal stress. The last chapter, sealing the first section, focuses exclusively on general knowledge highlighting the significance and potential use in the near future of plant extracts as natural fertilizers and for the control of plant diseases. In the second section, the editors included a unique chapter dealing with water resources to address the lack of comprehensive and unified data. Indeed, this chapter is an ideal resource for study and reference on water input and output issues covering irrigation, groundwater, river basins… The central message of the last section is quite relevant from an economic and social point of view, especially when the editors consider the contribution of forests and woodlands to national economy through production of cork, though neglected, is quite considerable. Editors collected data on this remarkable tree species taking into account some conservation and economic values to sound the alarm that, in near future, production of cork will not be viable anymore if there is no serious revision of existing policies. The book will be of interest to various audience targets: horticulture students, lecturers and local policymaker’s as well environmental and agricultural officials.

Animal Agriculture

Domestic Animals
Richard L. Allen
In series: Animal Science, Issues and Research
Hardcover: 978-1-53616-312-4. $195.00.

This book on the history, breeding, management and diseases of domestic animals is a snapshot of American animal husbandry around the year 1850.
Livestock: Production, Management Strategies and Challenges
Victor Roy Squires (Institute of Desertification Studies, Beijing; International Dryland Management Consultant, Adelaide, Australia) and Wayne L. Bryden, PhD (Professor of Animal Science, School of Agriculture & Food Sciences, University of Queensland, Australia)

In series: Agriculture Issues and Policies
In series: Animal Science, Issues and Research
Hardcover: 978-1-53615-540-2, $270.00.
e-book: 978-1-53615-541-9, $270.00.

This book brings together and discusses information relating to animal production systems in different parts of the world. Throughout this book there are examples of systems comprised of a collection of interdependent and interactive elements that act together to accomplish a desired outcome. As indicated in the Preface, editors sought to give a broad description of existing systems of livestock production in different parts of the world. They discuss some of their important components and try to identify why and how these components have interacted with the systems being described. By editorial concept and by cross-referencing between chapters, this book should serve as a synthesis of several key issues. Along with the extensive bibliography (some in languages other than English) here, and in each other chapters, we present an approach to global livestock production that is up to date and comprehensive. The editors have commissioned writers from Asia, Africa, Australia, the Americas and Europe. The information they present helps our understanding of the complexity of the issues faced in the rapidly changing world in which we all live. What to do about burgeoning populations, rising living standards, shrinking areas of agricultural and pastoral lands, dilemmas about the morality of eating meat, competition for arable lands to grow food crops for humans or to provide fodder and grain for livestock have not yet been resolved. The book’s purpose is to provide the reader with a synoptic overview of the role of livestock in the economy and culture of peoples from every continent except Antarctica. This book draws together many aspects related to livestock industries around the world, beginning with an overview of the major production systems. Different geographic zones are associated with certain production systems. These are explained and a more in-depth examination (including case studies) of each is presented. Livestock production is the world’s largest user of land, either directly through grazing or indirectly through consumption of fodder and feed grains. Globally, livestock production currently accounts for some 36 percent of the gross value of agricultural production. In the developed countries, this share amounts to half of total production and in developing countries for almost one-third. Worldwide, animal production from livestock (meat, dairy products, eggs, fiber and hides and skins) is the basis of livelihoods of billions of people. The management (care and welfare) of livestock is called animal husbandry. Animal husbandry as a term covers matters relating to livestock production and management, physiology of animals, reproduction, preservation and protection from disease, nutrition and feeding, housing, welfare and behaviour. The predominant production systems in the world range from extensive pastoral systems to intensive landless systems. The classification is justified by its usefulness in identifying livestock development possibilities. Systems at different stages on the development path face widely differing constraints on their further improvement. This book is particularly valuable in this context. The book has 17 chapters in five parts. The authors are drawn from 12 countries, many from the developing world. They are people with in-depth knowledge of the local situation and provide insights into the role, function and interdependence of people and their livestock. The book will be an invaluable addition to the already comprehensive technical literature on the physiology, behaviour, and genetics of both ruminant and non-ruminant livestock (including poultry, rabbits, and even more exotic “mini livestock” species that are part of the food chain. Readership will include livestock specialists who wish to learn more about the global situation, personnel from the donor community, the UN agencies, NGOs, geographers and the curious lay persons.

Biorenewable Resources

Innovative Bio-Products for Agriculture: Innovative Phosphorus Bio-Fertilizers
Katarzyna Chojnacka (Faculty of Chemistry, Wroclaw University of Technology, Poland) and Agnieszka Saeid, PhD (Wroclaw University of Science and Technology, Faculty of Chemistry, Department of Advanced Material Technologies, Wroclaw, Poland)

In series: Agriculture Issues and Policies
Sofcover: 978-1-53614-779-7, $82.00.
e-book: 978-1-53614-780-3, $82.00.

The presented book describes the results of the research of the project titled ‘Phosphorus Renewable Raw Materials – A Resource Base for the New Generation of Fertilizers’ attributed to the National Center for Research and Development of Poland. This book is divided into three chapters that are assigned to different stages of the project undertaken by different R&D institutions. The concept and possible options of valorization of waste biomass, such as bones, fish bones, and ashes originated from the incineration of sludge from a waste-water treatment plant from the tertiary stage of biological treatment
as resources of phosphorus were described by the team from Wrocław University of Science and Technology. As a method of by-products valorization, the solubilization process was proposed. Two strategies were proposed: Ex-situ and In-situ. The In-situ manner resulted with suspension fertilizer with a low concentration of P2O5 while Ex-situ gave the possibility to obtain two solid formulations with the high content of P2O5. All of them could be used in agriculture and horticulture as granular fertilizers or as substrates. The different content of P2O5, as well as other nutrients in obtained formulations, were described as an effect of utilization of different raw materials as well as various additional substances such as binders necessary for the stability of final formulations. What is more, the efficiency of obtained formulations was strongly related to the kind of microorganism used as an ‘activator’ of unavailable phosphorus, which was discussed in details. The technology of production for biofertilizers in pilot-scale was described by the Institute of New Chemical Synthesis in Pulawy with the following issues underlined: Design of installation to produce fertilizers based on renewable raw materials; plant construction and production of the product; and preliminary economic analysis. The University of Warmia and Mazury in Olsztyn described the utilitarian properties of new fertilizer formulations that were evaluated in field tests with special attention to granular and suspension biofertilizer. In that chapter, the major results of the agronomic evaluation of new suspension and granular phosphorus biofertilizers from secondary raw materials (sewage sludge ash, animal bones, and animal blood) were presented. Biofertilizers contained Bacillus megaterium or Acidithiobacillus ferrooxidans bacteria. New bioproducts were tested in field experiments in reference to traditional commercial phosphorus fertilizers (superphosphate, phosphorite, etc.). The research confirmed that phosphorus biofertilizers from renewable raw materials were similar to commercial fertilizers in terms of their crop-enhancing efficiency and did not reduce yield quality and quantity.

Crops

Crop Insurance: Overview, Delivery and Options
Alexa B. Verderosa
In series: Agriculture Issues and Policies
Hardcover: 978-1-53615-274-6. $195.00.

Since its inception in 1938, the program has evolved from an ancillary program with low participation to a central pillar of federal support for agriculture. As the program has grown—in types of insurance policies, breadth of crops covered, and millions of acres enrolled—so has the cost of the program to the federal government. The first two chapters provide an overview of the federal crop insurance program. Chapter 3 focuses entirely on delivery subsidies and explains how delivery subsidies are calculated, the limitations of publicly available data on the actual delivery expenses of Approved Insurance Providers (AIPs), and how AIPs spend delivery subsidies. In 2010, USDA negotiated an agreement with insurance companies to set a national cap on the annual payments it makes to them for expenses and a target rate of return. Chapter 4 examines (1) the changes in expense payments to companies due to the cap, (2) the extent to which the program’s target rate of return reflects market conditions, and (3) opportunities for the federal government to reduce its delivery costs for the program. Before the Agricultural Act of 2014 cotton was eligible for most Federal farm programs. The 2014 Farm Act eliminated multiple programs, including the Direct and Countercyclical Program, while introducing several new programs, including the Supplemental Coverage Option (SCO), and Stacked Income Protection Plan (STAX). Chapter 5 focuses on the two new programs for cotton and examines the mechanics of the programs and their revenue impacts. Catastrophic coverage for noninsurable crops, known as the Noninsured Crop Disaster Assistance Program (NAP), has been available since the Federal Crop Insurance Reform Act of 1994. Chapter 6 examines the effects of the 2014 NAP policy change. Crop insurance premium subsidies are an important part of Compliance incentives under the 2014 Act. Farm program benefits under the 2014 Act could be as high or higher than under the 2008 Farm Act; but for individual farms, the shift toward a crop insurance-oriented policy could increase or decrease Compliance incentives as reported in the last chapter.
Linseed: Properties, Production and Uses
Hemant Kumar Yadav, PhD (CSIR-National Botanical Research Institute, Rana Pratap Marg, Lucknow, India), Sujit Kumar (Scientific Officer, Uttar Pradesh Council of Agricultural Research, Lucknow, UP, India) and PK Singh (Project Coordinator, AICRP on Linseed, CSAU AuT, Kanpur, India)

In series: Botanical Research and Practices
2019.
Hardcover: 978-1-53616-090-1. $160.00.

This book consists of seven chapters on various aspects related to linseed. Linseed (Linum usitatissimum L.) commonly known as ‘alsi’ is a member of genus Linum within the family Linaceae with 14 genera and over 200 species. Out of those, only Linum usitatissimum L. possess both agronomic and economic properties and are being exploited for both industrial and human consumption purposes. Irrespective of medicinal, nutraceuticals and industrial uses of linseed, the popularity and attention required for its improvement is still not enough. Therefore, the aim of this book is to summarize all the information about linseed, which will provide a wide perspective to the on-going research activities for crop improvement. It is a collection of incisive reviews along with original research. The included chapters are an excellent source of information for linseed production, cultivation, properties, uses and breeding strategies. This book will initiate interest in utilization of linseed as major crop and also ignite the research possibilities, which are left unexplored.

Pears: Cultivars, Production and Harvesting
Alberto Ramos Luz (Department of Agronomy, Santa Catarina State University, Lages, SC, Brazil)

In series: Agriculture Issues and Policies

This book brings up-to-date information on different topics about the pear tree cultivation. The book was organized by Alberto Ramos Luz, Technologist in Fruit Crops, MD and PhD in Plant Production, specialist and lover of this culture. The chapters were written in collaboration with researchers and professors from Universities and Research Institutions of four different continents (South America, North America, Europe and Asia). The book was divided in the following chapters: 1. Propagation and orchard establishment (Giacobbo et al.); 2. Traditional pear varieties in the east region of Republic of North Macedonia (Selamovska et al.); 3. An updated view on fertilization and pollination in European pears (Pyrus communis) (Goldway et al.); 4. Vegetative growth control (Pasa et al.); 5. Precocity production of pear trees grafted on high-vigor rootstocks (Almeida et al.); 6. Dormancy adaptation in pear trees grown under mild winter conditions in Brazil (Herter et al.); 7. Management techniques to increase yield of European pear trees grown in subtropical climate (Luz et al.); and 8. Water management based on precision agriculture for pears (Yamazaki and Kazuya). Basic content and more specific and in-depth content are presented such as a series of research results and experiences on behavior and management tools to grown pear trees in subtropical climate, warmer conditions of the traditionally cultivated areas, subject of world-wide interest in the face of the climatic changes that are occurring over the years.

Sorghum: Properties, Synthesis and Applications
Valentin Missiakô Kindomihou, Ph.D. (University of Abomey-Calavi (UAC), Faculty of Agronomic Sciences (FSA), Department of Animal Production (DPA), Cotonou, Benin)

In series: Agriculture Issues and Policies
Hardcover: 978-1-53614-405-5. $195.00.

Sorghum abilities, which have significant impacts on human and animal development, have recently increased. This book includes chapters derived from original research and the synthesis of current knowledge on specific topics. It is an original collection of research findings or summaries of articles from around the world that are part of discussions on the status of sorghum and its applications in various areas of development. This volume addresses physiological, ecological, functional and genetic foundations of sorghum through the examination of theories and case studies that explain various properties, synthesis and applications. The chapters address, respectively, sorghum attributes, heterosis association and molecular mapping for grains traits, ecophysiology, reproductive competence, molecular mechanism of flowering time control, sensory and nutritional properties, mechanisms involved in allelochemical
biosynthesis, and applications of bioactive compounds, i.e., polyphenolic and acidic phenolics. This book offers essential approaches including: (i) A generic and rapid way to combine the diversity of single nucleotide polymorphisms with heterosis, which facilitates the dissection of the molecular mechanisms underlying the quality and quantity of grains in an important sorghum crop; (ii) the principles and processes of extrusion in order to obtain grains of good sensory and nutritional characteristics; (iii) the indicators in assessing the role of sorghum as a source of energy in the productivity of poultry farming systems; and (iv) some characteristics of root and foliar responses to water stress of a genotype amenable to genetic modification. It also makes a sweeping analysis concerning the progress of current research in the floral transition of sorghum and the photoperiod response. The final chapter highlights the importance of bioactive compounds of sorghum species, mainly in fighting diseases related to human nutrition, all of which are currently leaders in the developed world. Case studies from around the world were reported, giving readers a real view of the extent of sorghum properties along with real-world applications strategies. The book provides references to students, scholars, professionals and political decision-makers involved in the study and management of properties, synthesis and applications of sorghum.

Sweet Sorghum: Characteristics, Cultivation and Uses
Lila Rogers and Mona Willis

In series: Agriculture Issues and Policies
Softcover: 978-1-53615-386-6. $82.00.
e-book: 978-1-53615-387-3. $82.00.

Sweet sorghum is a cereal that belongs to the species Sorghum bicolor (L) Moench. Although the crop is reportedly native to Africa, it is grown worldwide largely because it thrives well under wide rainfall, varied day lengths, and varied soil conditions and can tolerate varying degrees of biotic and abiotic factors and stresses. In Sweet Sorghum: Characteristics, Cultivation and Uses, the authors review the physiology and adaptation of sweet sorghum crops to varied environmental and climatic conditions across Sub-Saharan Africa. The authors also discuss the saline soil distribution and cultivation of sweet sorghum in China. Soil salinization is one of the most prominent environmental problems in the world, which limits crop yield and productivity seriously. Today, about 20% of the world’s cultivated land and nearly half of all irrigated lands are affected by salinity. Lastly, the utilization of sweet sorghum bagasse as raw material in the development of an environmentally friendly particleboard bonded with a natural adhesive without the addition of harmful chemical substances such as citric acid was carried out. The effectiveness of several manufacturing conditions such as pre-treatment of particles before hot pressing condition, citric acid contents, pressing temperature and time, and sucrose addition were investigated.

Forestry

Forest Conservation: Methods, Management and Challenges
Pedro Eisenlohr (State University of Mato Grosso (UNEMAT), Alta Floresta, MT, Brasil)

In series: Environmental Research Advances
Hardcover: 978-1-53614-559-5. $195.00.

Forest Conservation: Methods, Management and Challenges offers to a wide readership the opportunity to understand, consider and plan strategies that aim to conserve forest ecosystems across the world. This book presents ten chapters written by renowned researchers from Brazil, Argentina, Tunisia and Germany, offering to the scientific community – as well as to human society as a whole – important concepts, methods and gaps that we need to fill if we wish to preserve Earth’s forests. The authors begin this collection by demonstrating how rare tree species could be a surrogate for biodiversity in conservation decision-making (Chapter One). Sustainable management of biodiversity in woody ecosystems is the theme of Chapter Two, followed by an interesting synthesis and discussion on challenges for conservation of forests and Brazilian reptiles (Chapter Three). Prioritization of areas for permanent preservation for forest recovery aiming at landscape connectivity (Chapter Four), conservation of Aleppo pine forests for post flood and fire plantings (Chapter Five), agroforestry and its connections to REDD+ activities in the Amazon (Chapter Six), forest conservation and its challenges in tropical Africa (Chapter Seven), large dams in the Amazon and their effects on the fauna (Chapter Eight) and selection and propagation of native tree species for improving ecological restoration (Chapter Nine) are themes deeply addressed in the next contributions, including interesting case studies. This book ends with an approach to environmental suitability modeling and its potential to support conservation decisions and ecological restoration programs in virtually any part of the world (Chapter Ten). Forest Conservation: Methods, Management and Challenges is an important tool for students, researchers, decision-makers, governmental and non-governmental agencies that are interested in preserving different forest types in order to assure biodiversity conservation for current and future generations.
**Pinus: Growth, Distribution and Uses**

*Sylvester Stephens*

In series: *Plant Science Research and Practices*

2020.

Softcover: 978-1-53616-429-9. $82.00.

e-book: 978-1-53616-443-5. $82.00.

In *Pinus: Growth, Distribution and Uses*, analyses of the current state of Scots pine (*Pinus sylvestris* L.) and the distribution of pine forests were carried out in three zones of East European plain: a taiga, a temperate broadleaf and mixed forest, and a temperate steppe. A study is included which focuses on somatic embryogenesis in Yakutanegoyou, *Pinus armandii* Franch. var. amamiana (Koidz.) Hatusima, an endemic and endangered species in Japan, which was initiated from megagametophytes containing zygotic embryos on a medium supplemented with 2,4-dichlorophenoxyacetic acid and 6-benzylaminopurine. Lastly, the authors gather and present information about pinus cultivation, as well the potential use of pinus bark as an adsorbent to remove Cd2+, Pb2+ and Cr3+ from contaminated water.

**Horticulture**

**Cacti: Ecology, Conservation, Uses and Significance**

*Marianna Rodrigues Santos (Federal institute of Northern Minas Gerais, IFNMG, Brazil)*

In series: *Plant Science Research and Practices*

2019.


Cactaceae is a botanical family composed of arborescent, shrub, climbing, globose, discoid or epiphytic species, being almost all endemic to the Americas. Cactaceae occurs between latitudes 35º North and South, both at sea level and up to over 5000m altitude. In this way, their species have the capacity to grow in different ecosystems. However, the greatest diversity is found in arid and semi-arid regions, where they are important sources of resources for several species of vertebrates and invertebrates, mainly in the drought season, when there is a great shortage of resources. In addition, some species of cacti represent an important source of food resources for humans and their herds, as well as having enormous ornamental value. Thus, cacti have always aroused the because of their morphological peculiarities and chemical properties. Due to this, cacti have now been the subject of diverse studies. This book brings studies of several areas of plant biology, ecology, conservation and uses of cacti. The first four chapters compose the part related to ecology and conservation. Several species of Cactaceae in Brazil and the world are seriously endangered, with about 31% of the family categorized as threatened. Chapter 1 discusses the importance and how the ex situ conservation of cacti is carried out in the Botanical Garden of Rio de Janeiro in Brazil. In Chapter 2, the authors carried out population studies of two species of endemic cacti of Chapada Diamantina, Brazil, in order to evaluate the population structure of the species for decision-making in relation to their conservation. In Chapter 3, authors studied the biogeography and conservation of Discocactus species that are endemic to South America. In Chapter 4, the authors discuss the floral morphology and the ecological interactions highlighting the importance of conservation of cacti for ecosystems maintenance. Chapters 5 to 10 address issues related to the uses and significance of cacti. Chapter 5 discusses cacti of the genus *Pereskia* with a healthy diet alternative due to its nutritional properties. The toxicological evaluation, antinociceptive and anti-inflammatory effects of plant extracts is discussed in Chapter 6, specifically, roots of *Cereus jamacaru*. In Chapter 7 the use of fibers from *Opuntia* species in the manufacture of Agave juice is evaluated, due to the importance of including fibers in human consume, because dietary fiber may contribute in the prevention of chronic diseases such as diabetes, cancer and cardiovascular illnesses. The antioxidant activity of prickly pear of *Opuntia* is discussed in Chapter 8, because besides betalains, prickly pear contains vitamins and phenolics. In Chapter 9, the research describes the industrial applications of the berry as well as key points for future research. And in Chapter 10, bioactive compounds of *Opuntia oligocantha* were determined, as well as their antioxidant capacity, antimicrobial activity and shelf life. All the studies presented in this book are of great importance and serve as a basis for further research to be carried out to make the species of the Cactaceae family be seen beyond their ornamental value.
Irrigation

**Deficit Irrigation of Pome and Small Fruits (Pear, Raspberry, Blueberry): A Scientific Monograph**

_Lavdim Lepaja, Endrit Kullaj and Kujtim Lepaja (Horticulture Department, Agriculture University of Tirana, Tirana, Albania)_

In series: _Agriculture Issues and Policies_  
Softcover: 978-1-53615-758-1. $82.00.  
e-book: 978-1-53615-759-8. $82.00.

Irrigation of pear, raspberry and blueberry is less studied relative to apple and peach, for example. Various researchers have tried different techniques to reduce vegetative growth, but regulated deficit irrigation (RDI) and partial rootzone drying (PRD) are the most favourable and cost-effective techniques, maintaining and, in some cases, increasing yields because allocation of photosynthetic carbohydrates to fruits is favoured compared to vegetative growth. Good knowledge of phenological stages susceptible to water stress is a prerequisite for the successful application of RDI and PRD as various factors affect separately or together the application of RDI and PRD. It should be emphasised that plants grown in open fields are highly dependent to climatic factors, and this is demonstrated by the fact that the same researchers have gathered drastically different results in various environments. RDI is applied in countries in arid climates as it saves water more than in humid or temperate climates. Different cultivars and rootstocks have different response to RDI and PRD. Thus, the application time depends very much from the genotype, because application at early age of the tree may have negative consequences. Under the climatic conditions of Kosovo, which fluctuate year after year, application of regulated deficit irrigation may start at the end of May or beginning of June. While for early cultivars, may apply even after harvest. As in raspberries we have two types of cultivars, florican and primocane. Therefore, cultivar also plays a crucial role in deficit irrigation. Under the conditions of our country, PRD application for florican varieties may also be delayed because there is sufficient rainfall in spring, while for primocane varieties by the end of May – beginning of June, but the monitoring of raspberry orchards still indicates the right moment to begin. The correct application of RDI on pear increases flowering, number of fruits (reduces fruit size), yield and reduces vegetative growth including canopy size. The use of deficit irrigation in combination with mulching is a new technology and our preliminary results on pear have shown that it reduces canopy volume and trunk diameter, which is considered very positive, beside the positive advantages of mulching. RDI and PRD technique is being improved and adapted to different environmental conditions.

Pest Control

**Endosulfan: Uses, Toxicological Profile and Regulation**

_Ishwar Chandra Yadav, PhD, and Ningombam Linthoingambi Devi (Centre for Environmental Sciences, Central University of South Bihar, Bihar, India)_

In series: _Environmental Science, Engineering and Technology_  
e-book: 978-1-53615-911-0. $160.00.

The primary purpose of this book is to provide general information, health impact, toxicological information and regulatory status of endosulfan. Additionally, the residual level of endosulfan in multi-environmental matrices from South Asian countries is considered with an eco-toxicological and human health risk context. This book is intended for public health officials, physicians, toxicologists, and other interested individuals and groups with an overall perspective on the toxicology of endosulfan. The content of the book is divided into 8 chapters, each of which discusses various aspects of endosulfan together with residual data of endosulfan from South Asian countries. The basic information about endosulfan is discussed in Chapter 1. Chapter 2 and 3 describe the residual contamination, eco-toxicological impacts and regulatory policy of endosulfan in India environment. Chapter 4 relates to the evaluation of endosulfan in human samples. Chapters 5 and 6 focus on the residual level and management of endosulfan in tropical countries including Sri Lanka and Pakistan. The remediation techniques available for reducing the impact of endosulfan is detailed in Chapter 7 and 8.
Soil

Manuel Esteban Lucas-Borja (Castilla La Mancha University, School of Advanced Agricultural Engineering, Department of Agroforestry Technology and Science and Genetics, Albacete, Spain), Demetrio Zema (University RC, Italy) and Yang Yu (Department of Sediment Research, China Institute of Water Resources and Hydropower Research, Beijing, People’s Republic of China)
In series: Agriculture Issues and Policies
Hardcover: 978-1-53615-908-0. $160.00.
Natural ecosystems provide the basic conditions without which humanity could not survive. Goods and services provided by ecosystems include, for example, provision of food, fibre and fuel, purification of water and air, cultural and aesthetic benefits, stabilization and moderation of the Earth’s climate, generation and renewal of soil fertility, including nutrient cycling or maintenance of genetic resources as key inputs to crop varieties and livestock breeds, medicines, and other products. However, the ability of natural ecosystems to continue performing these services is seriously threatened because plant species diversity or soil are being seriously deteriorated, and in some cases destroyed. While loss of species has always occurred as a natural phenomenon, the pace of extinction has accelerated dramatically as a result of human activity. Ecosystems are being fragmented or eliminated, and innumerable species are in decline or already extinct. At the same time, various studies worldwide have shown that soils do not support intensive annual plant cultivation without fertilizer applications and even these may not maintain sustainability. Inappropriate silvicultural operations or the use of land for intensive agricultural purposes is one of the main causes of soil degradation, and there is therefore worldwide interest in quantifying the loss of soil quality generated by incorrect agricultural operations or forest management practises. This can only happen if people have the right information, skills, and organizations for understanding and dealing with soil and plant diversity issues. This books deals with soil management and restoration strategies in order to maintain soil quality avoiding soil deterioration. Throughout the book, different authors present very interesting works related to the nitrogen status of containerized Australian blackwood (Acacia Melanoxylon) seedings, soil carbon stocks in different vegetation types, biological soil crusts distribution in China sandy soils, ash soil fertilizers, the watershed management of badland areas, effects of pipeline construction-related disturbances on soil properties, soil quality indicators and soil hydrology in dry areas and aggregate characteristics within the soil active layer.

Unsaturated Soils: Behavior, Mechanics and Conditions
Martin Hertz
In series: Environmental Remediation Technologies, Regulations and Safety
Softcover: 978-1-53615-985-1. $95.00.
This compilation opens with an exploration of the vadose, or unsaturated zone, which is of utmost importance as the nexus between surface water and groundwater. It is the link between what happens on the surface and what happens below, inside the aquifers. As such, understanding this underground natural environment is essential for the sustainable development of society. Due to the complexities involved in considering the hysteretic response of the Soil Water Characteristic Curve and its dependency on volume changes, these two features are often ignored in numerical studies of unsaturated soils. To facilitate their use in numerical modeling, a model for the Soil Water Characteristic Curve equation based on the bounding surface concept is proposed. The authors go on to focus on the temperature distribution and water migration in unsaturated soil, which is of significant importance because these factors are related to the thermal-physical properties of soil. The changes in these properties may cause disastrous engineering problems such as the cracking of pavement, damage of structure foundation and fracture of pipelines. Lastly, Unsaturated Soils: Behavior, Mechanics and Conditions addresses the measurement and expression of the mass chemical potential in the presence of superficial layers induced by a complex structure. By definition, the mass chemical potential of a constituent in a soil represents the variation of the internal energy of the medium when a unit mass of the constituent is transferred to a reference state with the entropy, volume and mass of the other constituents remaining constant.
Agricultural Issues: Policies, Conservation and Farm Programs
Michael Butlin

In series: Agricultural Issues and Policies
Hardcover: 978-1-53615-474-0. $230.00.

Agricultural Issues: Policies Conservation and Farm Programs is a compilation of government reports. The Agriculture appropriations bill, as described in chapter 1, funds all of USDA, excluding the U.S. Forest Service. It also funds the Food and Drug Administration (FDA) in the Department of Health and Human Services (HHS). The Natural Resources Conservation Service (NRCS) and the Farm Service Agency (FSA) in the U.S. Department of Agriculture (USDA) currently administer 20 programs and subprograms that are directly or indirectly available to assist producers and landowners who wish to practice conservation on agricultural lands. These programs are discussed in chapter 2. Chapter 3 provides background on the trade dispute that triggered the trade-aid package as well as the authority used by USDA to respond to the trade dispute with financial assistance and then describes the three components of the trade-aid package with details on their implementation. For each crop year, the U.S. Department of Agriculture (USDA) makes billions of dollars in payments to agricultural producers for which being actively engaged in farming is a requirement. As described in chapter 4, the largest programs in terms of payments are the Price Loss Coverage program, which makes payments in years in which a crop’s market price is less than a statutorily set price, and the Agriculture Risk Coverage program, which makes payments in years in which a crop’s revenue is less than a revenue guarantee. Chapter 5 describes cotton’s special treatment, relative to other traditional farm program crops, in the 2014 farm bill. The outlook for lower net farm income and relatively weak prices for most major program crops signals the likelihood of continued relatively lean times ahead.

Chapter 6 incorporates USDA's August 30, 2018, farm income projections and its August 29, 2017, U.S. agricultural trade outlook update. The 2014 Farm Act provides eligible U.S. farmers with new commodity supports in the Agriculture Risk Coverage (ARC), the Price Loss Coverage (PLC), and the Supplemental Coverage Option (SCO) programs. Chapter 7 provides an analysis of these programs with a focus on how various combinations of the programs impact producer revenue and its variability, producer well-being, and expected program costs. Chapter 8 focuses on how specialty crops are covered under the federal crop insurance program. The Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture (USDA) currently administer 20 programs and subprograms that are directly or indirectly available to assist producers and landowners who wish to practice conservation on agricultural lands. These programs are discussed in chapter 2. Chapter 3 provides background on the trade dispute that triggered the trade-aid package as well as the authority used by USDA to respond to the trade dispute with financial assistance and then describes the three components of the trade-aid package with details on their implementation. For each crop year, the U.S. Department of Agriculture (USDA) makes billions of dollars in payments to agricultural producers for which being actively engaged in farming is a requirement. As described in chapter 4, the largest programs in terms of payments are the Price Loss Coverage program, which makes payments in years in which a crop’s market price is less than a statutorily set price, and the Agriculture Risk Coverage program, which makes payments in years in which a crop’s revenue is less than a revenue guarantee. Chapter 5 describes cotton’s special treatment, relative to other traditional farm program crops, in the 2014 farm bill. The outlook for lower net farm income and relatively weak prices for most major program crops signals the likelihood of continued relatively lean times ahead.

The Agricultural Research Updates is a compilation of government reports. The Agriculture appropriations bill, as described in chapter 1, funds all of USDA, excluding the U.S. Forest Service. It also funds the Food and Drug Administration (FDA) in the Department of Health and Human Services (HHS). The Natural Resources Conservation Service (NRCS) and the Farm Service Agency (FSA) in the U.S. Department of Agriculture (USDA) currently administer 20 programs and subprograms that are directly or indirectly available to assist producers and landowners who wish to practice conservation on agricultural lands. These programs are discussed in chapter 2. Chapter 3 provides background on the trade dispute that triggered the trade-aid package as well as the authority used by USDA to respond to the trade dispute with financial assistance and then describes the three components of the trade-aid package with details on their implementation. For each crop year, the U.S. Department of Agriculture (USDA) makes billions of dollars in payments to agricultural producers for which being actively engaged in farming is a requirement. As described in chapter 4, the largest programs in terms of payments are the Price Loss Coverage program, which makes payments in years in which a crop’s market price is less than a statutorily set price, and the Agriculture Risk Coverage program, which makes payments in years in which a crop’s revenue is less than a revenue guarantee. Chapter 5 describes cotton’s special treatment, relative to other traditional farm program crops, in the 2014 farm bill. The outlook for lower net farm income and relatively weak prices for most major program crops signals the likelihood of continued relatively lean times ahead.

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chapter attempts to assess the sustainability level of different types of agro-ecosystems in Bulgaria. A holistic hierarchical framework for measuring the integral, economic, social and ecological sustainability of agro-ecosystems in Bulgaria is proposed. Following this, a study is presented with the goal of identifying and evaluating social and economic sustainability indices in corn production. Statistical regression models were derived to estimate summer precipitation in a single location derived using lineal backward regression techniques, and the different efficiency between the derived models was analyzed. Next, an analytical Fourier series solution to the equation for heat transfer by conduction in a spherical shell with an internal stone consisting of insulating material is presented, and an internal heat source linearly reliant on temperature is considered as a model of conduction of heat in stone fruits. The subsequent study analyses the effects of certain parameters on the baking properties of wheat in years with different weather conditions. The results indicate statistically significant correlation coefficients between protein content, wet gluten content, alveograph properties, extensograph properties and bread loaf volume. Lastly, a summary of recent knowledge is evaluated in order to contribute to a better understanding of how farming practices affect berry composition and consequently, the sensory characteristics of raspberries.

**Agricultural Research Updates. Volume 28**

*Prathamesh Gorawala and Srushti Mandhatri*

In series: *Agricultural Research Updates*

2019.

Hardcover: 978-1-53616-253-0. $250.00.

In the opening study of Agricultural Research Updates. Volume 28, the capillarigation system’s applications in vertical gardens were explored. The vertical garden model was designed for growing vegetables in home yards or within the vicinity of farming households, so they can have a regular supply of safe and nutritious food, especially during periods where water supply is scarce, excessive, or when maximizing the use of stored rainwater or kitchen wastewater. Next, this compilation describes recent progress and findings on the physiology of petal growth in cut rose flowers. To increase the ornamental value of cut roses, it is desirable that the timeframe for complete flower opening be relatively slow; therefore, understanding the mechanism by which rose flowers open is necessary to improve flower quality. The objective of the subsequent chapter is to present some recent findings about the influence of processing operations on the properties and bioactive compounds in carrots. To achieve this, different pre-treatments and processing operations are discussed, and their effects on some typical carrot baking properties are described. Additionally, the authors discuss theoretical aspects and recent developments in ready-to-eat spinach, with the goal of improving the preservation of nutritional quality after harvest and extending its shelf-life. The authors also analyse 30 samples of fresh, frozen and IV range spinach, with the aim of identifying and quantifying nitrate and nitrite levels. Following this, a study is presented on the scientific validation of the medicinal and edible utility of fruits of A. moschatus using standard protocols in order to account for potential commercial utilization. About 15 nutritional and five anti-nutritional constituents of the fruits of A. moschatus were tested and compared with those found in A. esculentus. In the penultimate chapter, the authors describe the current global status of conservation of cattle genetic resources and the cryo-technologies that are available to facilitate the protection of bovine genetic diversity. Worldwide adoption of such a policy has led to unique adaptations by cattle to a variety of local environments. The final chapter summarizes the following research progresses: the structure and components of Nox complex, the functions of these components, and control strategies for B. cinerea.

**Cotton: History, Properties and Uses**

*Jules Dagenais*

In series: *Agriculture Issues and Policies*


Softcover: 978-1-53615-993-6. $95.00.

In this compilation, the authors aim to evaluate the emulsifying properties and the foaming properties of cottonseed protein isolate produced either by isoelectric precipitation or dialysis membranes, as well as the relevant effect of some agents on these properties. Next, various aspects of amylase production, structural features of the starch, sizing of cotton yarns, amylase-assisted desizing, factors influencing the desizing process and evaluation of the sized fabrics are discussed. The closing chapter highlights the various issues involved in cotton contaminations and elimination methods, suitable for various stages of cotton processing. Color space models, machine vision, support vector machine, infrared based detection and classification systems are widely adopted with different levels of success.
Global Agricultural Extension Practices: Country by Country Approaches

Dixon Olutade Torimiro (Department of Agricultural Extension & Rural Development, Obafemi Awolowo University, Ile-Ife, Nigeria) and Chris Oroboa Igodan (Ohio State University Extension, College of Food, Agricultural, and Environmental Sciences, The Ohio State University, Columbus, Ohio, USA)

In series: Agriculture Issues and Policies


Hardcover: 978-1-53616-012-3. $230.00.

While the global marketplace is cluttered with books and products about agriculture and related issues of development, very few speak specifically to agricultural extension and its practices worldwide. Agriculture is the main source of livelihood for a majority of rural people and is often referred to as the mainstay of the economy of the developing world. Agricultural Extension practices or advisory services as per usage in some countries provide a close examination of country-by-country approach. In the book, contributions are drawn from thirteen countries in four regions of the world. Furthermore, the editors list the countries alphabetically. The countries are Botswana, Cameroon, Canada, Ghana, India, Kenya, Nigeria, South Africa, Swaziland, Tanzania, Ukraine and the United States of America. The many contributors of the book at the onset explore the historical evolution of agricultural extension in their respective countries. For example, during the colonial era and prior to self-governance in several African countries, agriculture was the sole powerhouse that supplied raw materials to the industries of the now western societies. The effective connection between the ‘colonial masters’ and the search for rural raw materials was the agricultural extension worker. In one way, this book helps to connect the history of colonial and post-colonial Africa in the sustenance of agricultural development in Europe and America. Canada and the United States of America share a lot but also have many differences in their approach to agricultural extension. While America owes its origins to the land grant cooperative extension service with a mandate to state supported universities for the implementation of its programs, Canada traced its need for agricultural extension services to the adaptation of technologies to individual skills for expanded production for growing population (Hamby, 2019). Additionally, while Canada, at one time with reason, withdrew from public agricultural extension, the USA never followed that path since its inception of extension work in 1785. Formal law organizing the agricultural extension service sector in Ukraine is recent. Extension law of Ukraine was adopted in 2004 allowing for a robust participation of both public and private sector. (Windon and Zaburanna, 2019). The chapter on Ukraine provides insights to the understanding of this effort. The success of India’s agricultural revolution could be traced to the resilience of local rural farmers who labored day and night till the soil in a sustainable manner. Indian and Pakistani farmers worked alongside extension workers in their respective countries to provide the advice and education that helped the transformation of the agricultural sector. Finally, there are two important points to make here. First, this book, while based on agricultural extension practices, provides a country-by-country comparative assessment. It is easy to read and a good narrative to follow. However, the comparisons are largely limited to the countries examined in the book. Second, the book allows us to review the success and failures of many institutions such as the World Bank, international development agencies and other donor organizations for their participation and recommendation to the efforts of countries involved in the practice of agricultural extension worldwide.

CHEMISTRY

Analytical Chemistry

A Closer Look at Calorimetry

Oliver Wrigley

In series: Chemistry Research and Applications


Softcover: 978-1-53615-789-5. $82.00.
e-book: 978-1-53615-790-1. $82.00.

In this compilation, the authors review the planning of multithermal titration calorimetry experiments using triosephosphate isomerase as a case study with two of its inhibitors, 2PG and PGH, under physiological conditions and osmotic stress. Following this, the authors revisit classic and disequilibrium calorimetry by presenting and discussing raw data obtained with a thermocouple probe and a beaker filled with water and placed in an ultrasonic cleaning bath. Both calorimetric methods are compared and evaluated. A combination of temperature-dependent UV spectroscopy, differential scanning calorimetry and circular dichroism techniques are explored for the investigation of their thermodynamic contribution to the incorporation of bulges and mismatches in duplex DNA. The authors also attempt to expound how to apply electrochemical Peltier heat to investigate the thermodynamics of electrochemical reactions and determine their thermodynamic parameters. A strict definition of electrochemical Peltier is given, and its generation and characteristics as a reversible heat are discussed. The closing chapter summarizes existing energy expenditure measurement methods,
discussing their influencing factors and applicability in different populations. Considering the importance of accurate expenditure in terms of health promoting strategies, this collection provides important insight into the determinants of appropriate energy expenditure estimation.

**Capillary Electrophoresis in the Early Twenty-First Century: New Trends and Relevant Applications**

*Oscar Núñez, PhD (Department of Analytical Chemistry, Faculty of Chemistry, University of Barcelona, Barcelona, Spain) and Xavier Subirats, PhD (Department of Analytical Chemistry, Faculty of Chemistry, University of Barcelona, Barcelona, Spain)*

In series: Analytical Chemistry and Microchemistry


Capillary electrophoresis (CE) comprises a family of related separation techniques in which an electric field is used to achieve the separation of components in a mixture. One of the key features of CE is the simplicity of the instrumentation required, and today, these techniques have become powerful analytical tools for high efficiency separation, and the identification of a variety of ionic and neutral compounds. Moreover, the versatility of CE operational modes (capillary zone electrophoresis, micellar electrokinetic capillary chromatography, capillary electrochromatography, capillary isoelectric focusing, isotachophoresis, non-aqueous capillary electrophoresis, etc.) and detection systems (ultraviolet, fluorescence, amperometric, mass spectrometry...) make CE useful for applications in many fields such as environmental, food, pharmaceutical, and forensic analysis. The typical drawback of CE techniques, based on their low sensitivity when dealing with conventional UV-detection, due to their short detection pathways and the short sample volume introduced into the capillary, has been largely resolved not only by using more sensitive detectors like fluorescence, amperometric, or mass spectrometry, but by the employment of both off-line and on-line enrichment procedures. The aim of this present book is to address the state-of-the-art of capillary electrophoresis techniques within this early twenty-first century, by reviewing new trends and the most relevant applications described in the literature. Uses in fields such as food, environmental, forensic and biological analysis are addressed by means of relevant application. The scope of this book is intentionally broad and is aimed at worldwide analytical laboratories, both public and private, at academic institutions, as well as researchers.

**Gas Separation: Techniques, Applications and Effects**

*Suraya Mathews*

In series: Chemistry Research and Applications


Hardcover: 978-1-53614-606-6. $95.00.

In recent decades, the science of gas separation by use of a nanoporous permselective membrane has widely developed due to properties such as low energy consumption, easy operation, low waste generation and economic benefits. In Gas Separation: Techniques, Applications and Effects, the fundamental concepts of membrane gas separation and the formation of nanoporous membranes are been discussed. The authors go on to examine mixed matrix membrane, a composite material comprising organic phase and inorganic fillers. The primary role of fillers is to systematically manipulate the molecular packing of the organic phase, thus enhance the gas separation properties of matrix membranes. The closing study analyzes the permeability and selectivity of carbon dioxide and methane gas of polyvinylchloride mixed matrix membrane with the inorganic fillers of zeolite 4Å particles. The fabrication of mixed matrix membranes is prepared by using dry/wet phase inversion method, and Fourier transform infrared spectroscopy is used to study the chemical interaction of the membrane by analyzing the intensity of the peak of chloride vibration.

**Photoisomerization: Causes, Behavior and Effects**

*Diego Sampedro*

In series: Chemistry Research and Applications


Hardcover: 978-1-53615-313-2. $195.00.

Different applications and uses of light energy have emerged over the last few years in many different fields such as in medicine, material science, energy and biochemistry. New and exciting applications of light-controlled processes have become practical in the diagnosis and treatment of diseases, the preparation and use of functional materials, the storage of solar energy and the control of biological properties. Many of these applications are based on a very simple chemical step: a photoisomerization. The isomerization of a chemical double bond allows for the control with extreme spatial and temporal resolution of complex systems. Nature offers different examples of very complex functions that are initiated by
this type of simple chemical. Upon photon absorption, the light energy can be used to induce a chemical (geometrical) change that influences the protein environment that triggers a specific signal or function. Inspired by these amazing and extremely efficient processes, many efforts have been devoted to the modification of natural systems and to the design of new applications, using simple and tunable photoisomerizations. Accordingly, the preparation of photoactive molecular devices based on photoisomerizations and the use of these species in different applications is now a very active scientific field, with profound implications in our everyday lives. In this book, the fundamental aspects of the photoisomerization of many different chemical structures containing $C=C$, $N=N$ and $C=N$ double bonds is covered. Different experimental and computational tools used to study these processes are discussed and some specific applications of different compounds are presented.

The Essential Guide to Lewis Acids
Oliver M. Sandes
In series: Chemistry Research and Applications
Softcover: 978-1-53615-236-4. $95.00.
e-book: 978-1-53615-237-1. $95.00.
Lewis acids have been utilized to activate molecules, whether it be the generation of a simple Lewis acid-base adduct or the coordination and activation of a substrate molecule in a catalytic transformation. When designing new Lewis acids, a synthetic chemist has to consider the properties of the Lewis acid. As such, this compilation describes the methods used in measuring Lewis acid strength, including a ladder diagram comparing the Lewis acid strength of both main group and metal-based Lewis acids. Since carboxylic acid derivatives are commercially available, non-toxic, cheap and normally stable to air and moisture, carboxylic acid derivatives are ideal reactants for synthetic strategy. The decarboxylative coupling reaction is discussed as one of the most important tools for organic synthesis, and remarkable progress has been made in this field. In conclusion, the authors highlight recent advances achieved in the development of processes for esters production from glycerol and terpenic alcohols in metal salts-catalyzed reactions, using acetic acid as the carboxylic reactant. The effects of main reaction parameters such as concentration, temperature and reactants stoichiometry are assessed. A comparison with traditional acid catalysts used in these reactions is also performed.

Biochemistry

A Closer Look at the Comet Assay
Keith H. Harmon
In series: Biochemistry Research Trends
2019.
A Closer Look at the Comet Assay opens with a discussion on the clinical applications of comet assay. Comet assay is rapid, simple method which able to assess DNA damage in different samples like blood, cells and tissues. Following this, the authors examine comet assay usage in occupational toxicology studies. Isolated lymphocytes were the most used cell line in these studies, but exfoliated cells such as nasal and buccal cell, liver, kidney and sperm cells may be used. Comet assay may also be used to detect nanoparticles-associated DNA damage. As such, this compilation assesses potential limitations due to the interaction of the nanoparticles with the method. Next, to shed light on the mechanisms of the DNA track formation, the authors apply an original approach based on the kinetic measurements in the comet assay, arguing that in neutral conditions at low levels of DNA damages, the comet tail is formed by extended DNA loops. New applications of the comet assay are described for the detection of aberrant DNA methylation, which is a promising marker in cancer diagnosis and follow-up. The authors go on to describe and analyse the results of in vitro treatment of lymphocytes with insecticide using comet assay under alkaline and neutral conditions, testing the commercial product Calypso® 480SC and its active agent thiacloprid at concentrations of 30; 60; 120; 240 and 480 µg.ml-1. In one study, Helianthus annuus (sunflower) seedlings were irrigated with Hoagland solution containing different concentrations of AlCl₃. Morphological parameters such as germination rate and stoma number are evaluated. Additionally, the genotoxic effects of endosulfan pesticide at different times and in different concentrations in wheat leaf samples are analyzed in two-week old wheat seedlings in an effort to demonstrate that endosulfan is a genotoxic agent causing DNA breaks in wheat. In the closing chapter, the correlation between the comet assay parameters, cell viability, and hydroquinone concentration is explored. The relationship between comet assay and remaining hydroquinone after fungal treatment is also investigated in order to evaluate its biodegradation efficiency.
A Quick Guide for Clinical Biochemistry

Buthainah Al-Bulushi (Sultan Qaboos University, Muscat, Oman) and Mohamed Essa, PhD (Department of Food Science and Nutrition, College of Agricultural and Marine Sciences, Sultan Qaboos University, Muscat, Oman, Food and Brain Research Foundation, Chennai, Tamil Nadu, India Ageing and Dementia Research Group, Sultan Qaboos University, Muscat, Oman)

In series: Biochemistry Research Trends
Softcover: 978-1-53614-860-2. $82.00.
e-book: 978-1-53615-952-3. $82.00.

Finding a simple and step-by-step procedure to conduct clinical biochemistry-related analyses is a real challenge for many undergraduate, graduate students, researchers and technicians in universities and laboratories. Moreover, understanding the theory of the experiment, which is not provided in some currently available manuals, is a useful and essential requirement in the experiment for successful performance, accuracy and acceptable results. The book contains 14 chapters. The first three chapters describe essential clinical aspects in laboratory such as specimens used for clinical chemistry analysis and sample collecting methods with common sampling errors. In addition, the fundamentals and laboratory techniques commonly used for sample analysis such as centrifugation, electrophoresis, photometry, fluorometry, and chromatography are also covered in one separate chapter. The later chapters discuss the biologic basics of liver, kidney and heart diseases and the common enzymes measured to assess the function of these organs. Moreover, properties, diagnosis and analysis of vital minerals disorders such as iron, calcium, phosphate, zinc and magnesium are discussed in five different chapters. Hematological disorders related to nutrition and some case histories and comments are added in order to help students to analyze and interpret the lab results in proper way. The book also has a separate chapter with lot of case studies and their solutions for better understanding. This book will be a useful reference for new students, non-native English medicine and life science students as it relies on figures and diagrams that explain the concepts and diagnosis of diseases in a simple way. Therefore, this quick guide aims to provide and develop the basic practical skills in the users with simple steps to follow along with the theoretical explanation for better understanding. It is expected that this quick handbook will provide good tools and useful guidelines for the students and researchers as well.

Amylases: Properties, Functions and Uses
Nikhil Adam

In series: Biochemistry Research Trends
Softcover: 978-1-53614-993-7. $82.00.
e-book: 978-1-53614-994-4. $82.00.

Amylases: Properties, Functions and Uses opens with an analysis of the methods commonly used for the immobilization of amylase on particles, the effect that the processes of adsorption and covalent immobilization have on the activity and stability of the enzyme, as well as on its stability and reusability. The authors go on to review current molecular strategies, including heterologous expression and mutations, for improving the production and properties of amylases from thermophilic bacteria. In conclusion, this compilation discusses the main advantages of the use of microorganisms for obtaining amylases: the production capacity in large quantities and ease of handling. Amylolytic enzymes have garnered attention because of their technological importance, economic benefits, and applicability in the commercial production of glucose.

An Essential Guide to Astaxanthin: Dietary Sources, Properties and Health Benefits
Paul A. Melborne

In series: New Developments in Medical Research
In series: Biochemistry Research Trends
Softcover: 978-1-53615-571-6. $82.00.
e-book: 978-1-53615-572-3. $82.00.

An Essential Guide to Astaxanthin: Dietary Sources, Properties and Health Benefits begins with a review of published studies regarding the efficacy and application of natural astaxanthin in aquaculture and human health, respectively. Next, to help in optimizing astaxanthin production, the changes of pigments (including chlorophyll and carotenoids) and astaxanthin geometrical isomers were elucidated during the incubation in H. pluvialis under environmental stresses. Changes in photosynthetic behaviors and photoprotective mechanisms during astaxanthin accumulation were clarified. In the closing chapter, the authors review methods for Z-isomerization of astaxanthin and subsequent changes in the physicochemical properties and functionalities.
Carboxymethyl Cellulose, Volume I: Synthesis and Characterization
Md. Ibrahim H. Mondal (Polymer and Textiles Research Lab, Department of Applied Chemistry and Chemical Engineering, Rajshahi University, Rajshahi, Bangladesh)
In series: Biochemistry Research Trends
Hardcover: 978-1-53614-742-1. $230.00.
Carboxymethylcellulose (CMC), also known as cellulose gum, is manufactured by the chemical synthesis of naturally-derived cellulose with chloroacetic acid. The multifunctional aspects of this product make it favorable for use as a key intermediate or ingredient in several applications. Furthermore, CMC is incorporated as a binding, thickening, stabilizing, emulsifying, suspending, sizing and coating agent in various applications. Cellulose gum enhances the aesthetics of the finished product by imparting a smooth texture and modifies the viscosity of various foods and beverages, superabsorbent hydrogels (as in many personal care products), cosmetics and pharmaceuticals. Textiles, paper and board, oil and gas drilling, paints and adhesives, and soaps and detergents are other major applications in the global market. The present book thus covers a wide range of applications; hence, a great number of people, both academics and industrialists, may find topics of interest about CMC, as well as other cellulosics. Although there are many research publications, patents and reports on CMC, no books about it are yet available. The present book reviews some vital issues and topics on the latest scientific and technological advances in carboxymethylcellulose. This book will provide an essential source of information to readers, in the exploration of possible applications of CMC, and in the generation of new ideas for product development. The book is divided into two volumes: Carboxymethyl Cellulose: Volume I – Synthesis and Characterization, and Carboxymethyl Cellulose: Volume II – Pharmaceutical and Industrial Applications. The book contains a total of 32 entries on selected topics. Each chapter describes some specific issues and gives the current status of research and technology in the study of synthesis routes or design concepts, methods and fabrication strategies, characterization and applications of CMC products, as well as future prospects for research in the subject area. Highlights of this book include synthesis and formation mechanisms of CMC, structure property relationships, homogeneous and heterogeneous phase modification to create common and functional products, analysis and characterization, absorption and swelling mechanisms, stimuli-responsive and super-absorbency nature, and a wide range of multi-dimensional applications, including human consumption and uses.

Cyanine Dyes: Structure, Uses and Performance
Douglas Zimmerman
In series: Biochemistry Research Trends
Hardcover: 978-1-53616-239-4. $160.00.
e-book: 978-1-53616-240-0. $160.00.
Cyanine Dyes: Structure, Uses and Performance begins with evaluation of the potential of 23 novel methine cyanine dyes to inhibit the amyloid fibril formation by insulin, and the limitations in the production and storage of insulin pharmaceutical formulations. Next, the authors describe the spectral properties of a series of monomethine, pentamethine and heptamethine cyanine dyes with an accent on their applicability to non-covalent labeling of biological macromolecules. Additionally, the authors provide an overview of various experimental and theoretical methods for the study of cyanine dyes self-organization, as well as their applications. The closing chapter focuses on exploring the interactions and aggregation behaviour of cyanine dyes within various ionic liquids and deep eutectic solvents-based systems.

Glutathione: Biosynthesis, Functions and Biological Implications
Pál Perjési, Ph.D.(Institute of Pharmaceutical Chemistry, University of Pécs, Pécs, Hungary)
In series: Biochemistry Research Trends
Glutathione (GSH) is a ubiquitous tripeptide (γ-L-glutamyl-L-cysteinyl-glycin) playing an important role in cellular redox homeostasis, defence against electrophilic reactive species, and control of several cellular events, among others. Most of these cellular functions are related to its thiol (SH) function of the cysteine moiety. With increasing knowledge on the molecular basis of its cellular functions, use of GSH as a nutritional supplement is receiving increasing interest. The present book summarizes the recent literature and new developments on three distinct, but closely related topics: Production, biochemical functions, implications and applications of glutathione. The
Hemagglutinins: Structures, Functions and Mechanisms

Tzi Bun Ng (Professor of Biochemistry, School of Biomedical Sciences, Faculty of Medicine, Chinese University of Hong Kong, China), Jack Wong (Chinese University of Hong Kong, China), Ryan Tse (Vita Green Pharmaceutical [Hong Kong] Ltd., Hong Kong), Tak Fu Tse (University of Hong Kong, Hong Kong) and Helen Chan (Vita Green Pharmaceutical [Hong Kong] Ltd., Hong Kong; School of Biomedical Sciences, Faculty of Medicine, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong, China)

In series: Biochemistry Research Trends


Hemagglutinins refers to glycoproteins which bring about agglutination of erythrocytes or hemagglutination. Hemagglutination can be used to identify surface antigens on erythrocytes (with known antibodies) and, hence, the blood type of an individual. Hemagglutinins consist of lectins and antibodies. Lectins (from the Latin legere, “to select”) are non-immune glycoproteins that exhibit reversible binding to specific carbohydrate structures, glycans of glycoproteins, glycolipids and polysaccharides. Lectins own at least one non-catalytic domain, and, in some cases, a few carbohydrate binding domains, which enable them to effect agglutination of erythrocytes and other cells or precipitation of glycoconjugates. Lectins are found in a constellation of organisms and display an array of activities. Topics discussed in this book encompass algal lectins, plant type 2 ribosome inactivating proteins, edible legume lectins, jacalin, jacalin-related lectin, wheat lectins, rice lectins, banana lectins and potato lectin, immunomodulatory action of plant lectins, piezoelectric assay using the galactose-binding Bauhinia monandra leaf lectin and its antibody as a potent tool for detection of antigen-antibody recognition, assays using hemagglutinins of different origins to investigate their mechanisms of action, lectins from medicinal herbs and medicinal mushrooms, C-type lectins from a diversity of invertebrates and vertebrates, fish lectins and amphibian lectins.

MCQ in Clinical Biochemistry

Pranav Kumar Prabhakar, PhD (Department of Medical Laboratory Sciences, Faculty of Applied Medical Sciences, Lovely Professional University, Phagwara, Punjab, India)

In series: Biochemistry Research Trends


Multiple Choice Questions (MCQs) are the backbone for all entrance examinations throughout the world. MCQs are used to evaluate student’s cognitive acumen in all the fields and discipline. This book contains 28 chapters covering almost all of the biochemistry syllabus through 3500+ MCQs. Each MCQ is validated from the reference biochemistry books. The book is mainly designed for the undergraduate, postgraduate, MBBS medical biochemistry students of medical, pharmacy, physiotherapy, nursing, medical laboratory sciences and other allied courses. This book can also be useful for the PG entrance exam of various universities, NET examinations, USMLE entrance examinations, etc. It includes questions from all categories, i.e. from the simplest ones to real brain teasers, in order to cater the needs of the unprepared students who start studying at the eleventh hour, besides, of course, the committed ones who are well conversant with the subject. The book is based on the current pattern of exam, and will prove very useful for studying, practice and during precious moments before the exam for reference and revision. It is highly recommended to sharpen your problem solving skills with thorough practice of numerous questions provided in the book, and prepare to face the exam confidently and successfully.
Trends in Biochemistry and Molecular Biology

Hossain Uddin Shekhar and M. M. Towhidul Islam (Department of Biochemistry and Molecular Biology, Faculty of Biological Sciences, University of Dhaka, Dhaka, Bangladesh)

Softcover: 978-1-53616-434-3. $270.00.
e-book: 978-1-53616-435-0. $270.00.

“Trends in Biochemistry and Molecular Biology” provides the essential information necessary for students in the life and health sciences. The book adopts a readable, student-friendly style that helps introduce students to this fascinating and often-times daunting subject. Each chapter begins with a summary of essential facts followed by descriptions of the subjects that focus on core information with clear, simple diagrams that are easy for students to understand and recall in essays. The extensive use of cross-referencing makes it possible for students to return to individual sections for review purposes without difficulty. Whether students interests lie in biological, chemical, or medical aspects of biochemistry and molecular biology, “Trends Biochemistry and Molecular Biology” will help make students able, excited, and eager to read more widely and more deeply on this engaging subject. This important new book not only covers an extensive set of topics of current and special interest, but includes more traditional areas in biochemistry as well. Covering a wide range of topics, from classical biochemistry to proteomics and genomics, it also details the properties of commonly used biochemicals, laboratory solvents, and reagents. Coverage is expanded to include a section on stem cells, chapters on immunochemical techniques and spectroscopy techniques, and additional chapters on drug discovery and development, and clinical biochemistry. Moreover, a number of techniques used in molecular biology, for example, molecular cloning, gel electrophoresis, polymerase chain reaction, microarrays, etc. are also explained with practical examples. It also includes some of the vital pieces of work being conducted across the world, on various topics related to molecular biology. Through it, we attempt to further enlighten the readers about the new concepts in this field. Altogether, presented in an organized, concise, and simple-to-use format, “Trends in Biochemistry and Molecular Biology” allows quick access to the most frequently used data. There is an emphasis on biological aspects of biochemistry and new topics are introduced in their biological context wherever possible. Experimental design and the statistical analysis of data are emphasized at the end to ensure students are equipped to successfully plan their own experiments and examine the results obtained.

Chemical Elements

An Introduction to Vanadium: Chemistry, Occurrence and Applications

Robert Bowell, Ph.D. (Steffen Robertson and Kirsten, Geochemist, Senior Geochemist, Wales, United Kingdom)

In series: Chemistry Research and Applications 2019.

Vanadium has, in the last two years, developed new uses, particularly in the field of redox batteries. The expanded use of vanadium reflects the complex redox-related chemistry of the element that allows it to form several oxidation states and to stabilise various chemical compounds. From the initial discovery in Mexico through to the modern day, vanadium has presented a challenge and opportunity for chemists. This volume summarises research and industrial development in understanding the chemistry of vanadium and its presence in natural and synthetic materials. This includes a review of vanadium mineralogy and occurrence in nature. The interaction with biomolecules and environmental dispersion is also discussed. Following on from this section the book delves into the application of vanadium in medical use and in power supply as well as issues related to the extraction of vanadium from its primary ores. The book has been developed by an international team of scientists and engineers with specialist interest in vanadium chemistry and use.

Chemical Engineering

Heat Conduction: Methods, Applications and Research

Jordan Hristov, Ph.D., D.Sc. (Department of Chemical Engineering, University of Chemical Technology and Metallurgy, Sofia, Bulgaria) and Rachid Bennacer (University of Paris-Saclay, Orsay, France)

In series: Chemical Engineering Methods and Technology 2019. 228 pp.
Hardcover: 978-1-53614-673-8. $160.00.

Heat conduction plays an important role in energy transfer at the macro, micro and nano scales. This book collates research results developed by scientists from different countries but with common research interest in the modelling of heat conduction problems. The
results reported encompass heat conduction problems related to the Stefan problem, phase change materials related to energy consumption in buildings, the porous media problem with Bingham plastic fluids, thermosolutal convection, rewetting problems and fractional models with singular and non-singular kernels. The variety of analytical and numerical techniques used includes the classical heat-balance integral method in its refined version, double-integration technique and variational formulation applied to the integer-order and fractional models with memories. This book cannot present the entire rich area of problems related to heat conduction, but allows readers to see some new trends and approaches in the modelling technologies. In this context, the fractional models with singular and non-singular kernels and the development of the integration techniques related to the integral-balance approach form fresh fluxes of ideas to this classical engineering area of research. The book is oriented to researchers, masters and PhD students involved in heat conduction problems with a variety of applications and could serve as a rich reference source and a collection of texts provoking new ideas.

Microfiltration: Principles, Process and Applications
Youssef El Rayess, PhD (Department Food Industry and Technolgy, INP-ENSA, France)
In series: Chemical Engineering Methods and Technology
2019.
Softcover: 978-1-53616-320-9. $95.00.
This book titled “Microfiltration: Principle, Process and Applications” is formed of 6 chapters covering many research aspects on microfiltration. These aspects include reviews and original research dealing mainly with fouling and cleaning of microfiltration membranes. In Chapter 1, mechanisms of fouling and factors affecting the fouling are presented. Also, it deals with techniques that assist mitigation of membrane fouling that occurs in microfiltration. The aim of Chapter 2 was the modelling and optimization by artificial neural network and genetic algorithm of yeast suspensions turbulence promoter assisted cross-flow microfiltration in concentration operation mode. Chapter 3 focuses on the principles, developments, implementation and application of microfiltration in wastewater treatment. In addition, the integration of microfiltration with other water and wastewater treatment technique is also included as well as the advantages and disadvantage of the microfiltration. The Chapter 4 objective is to introduce the most commonly used turbulence promoters’ types. Furthermore, congenial studies on the turbulence promoters’ application in the cross-flow MF regarding food industry streams and products are also presented within the chapter. In Chapter 5, the microfiltration process was used in order to obtain concentrated papaya (Carica papaya L.) pulp, evaluating the flux permeate from papaya treated pulp with enzyme pectinase and using different nominal mass molecular weights and different membranes materials. Chapter 6 discusses the performances and the quality of treated water of a Tunisian textile industry through a low-cost tubular ceramic membrane prepared by extrusion of a plastic paste prepared from clay powder mixed with organic additives and water.

Food Science and Technology

Cheeses around the World: Types, Production, Properties and Cultural and Nutritional Relevance
Raquel de Pinho Ferreira Guiné, Paula Maria dos Reis Correia and Ana Cristina Ferrão (CI&DETS Research Centre and Department of Food Industry, Polytechnic Institute of Viseu, Portugal)
In series: Food Science and Technology
Hardcover: 978-1-53615-418-4. $270.00.
e-book: 978-1-53615-419-1. $270.00.
Cheese is an ancient food product produced worldwide and globally appreciated. The world cheese trade is of great importance economically, both at the industrial level, as well as when it comes to traditional cheeses, which provide income for rural populations. The diversity in cheese technology is enormous, varying in the type of milk used, the production operations, the lactic cultures, the maturation times and conditions, among other aspects. Cheese products, therefore, have a wide range of characteristics in terms of taste, flavour, texture, colour, shape, or size. Unlike cheese produced at the industrial scale, traditional cheeses are imprinted with a social and cultural heritage that makes them unique. The first part of this book contains chapters dedicated to the economic and social importance of cheese, the nutritional aspects and health effects, cheese technology and characteristics, as well as yeast microflora. Further chapters contain details about the traditional cheeses in different parts of the world, including European, African, or American countries, namely Brazil, Burkina Faso, Croatia, Greece, Hungary, Italy, Latvia, Lithuania, Mexico, Poland, Portugal, Romania, Serbia, and Slovenia. This book contains a diverse set of contributions that will enlighten the readers about many types of cheeses from different countries around the world. It is useful for professionals, including professors, researchers, or those working in the cheese industry, as well as for students or even the general public. The subjects addressed in the book make it interesting for professionals in the scientific domains of food science and technology, nutrition, gastronomy, sociology, and history.
Coriander: Dietary Sources, Properties and Health Benefits
D. K. Semwal, PhD (Assistant Professor, Department of Phytochemistry, Faculty of Biomedical Sciences, Uttarakhand Ayurved University, Dehradun, Uttarakhand)

In series: Plant Science Research and Practices
2020.
Hardcover: 978-1-53616-483-1. $160.00.

The present book titled "Coriander: Dietary Sources, Properties and Health Benefits" consists of valuable information about the coriander plant. The contents provided in this book are the contribution of many authors belonging to different regions. The knowledge based on the traditional medicinal importance and scientific studies of Coriandrum sativum is well described in this reference book. In addition to students and academicians, scientists will also benefit from the information given in this book. The first chapter of the book describes the history, cultivation, plant characteristics, botanical classification, nutritional profile, phytochemical content, proximate composition, applications, medicinal and pharmacological properties of coriander leaf and seeds. Nutritional value together with the descriptive phytochemical profile and other applications of the coriander plant have been incorporated in this chapter. The second chapter focuses on the drying operation applied to coriander and the evaluation of the dried product’s characteristics and to what extent they are affected as compared to the fresh herb. The chapter also describes composition of raw coriander. In addition, various drying methods including vacuum, sun, microwave, freeze and supercritical carbon dioxide are given in detail. The antioxidant and antimicrobial activity of different parts of the plant are provided in chapter 3 whereas different biotechnological approaches including in vitro culture to improve the cultivation of the plant are given in chapter 4, which also describes its health benefits. A detailed phytochemistry including various extraction methods and their optimization is described in chapter 5. Polyphenolic compounds of coriander, as well as their health benefits, are given in chapter 6. In addition, it provides a phytochemical report on different parts of the plant. The chapter also reports a comprehensive knowledge of the traditional uses and pharmacology of coriander. The last chapter of this book reports the composition and health benefits of coriander oil together with other applications. This chapter mainly focuses on the antimicrobial activity of essential oil obtained from seeds as well as from the leaves. The information describing the effect of fertilizers on the cultivation of this important plant is also included in this chapter. Overall, the book covers almost all the important areas of research.

Edible Oil: Compounds, Production and Applications
Wenbiao Wu (College of Food Science, Southwest University, No.2 Tian Shengqiao, Beibei, Chongqing, China) and Xinchu Weng (Shanghai University, Shanghai, China)

In series: Food Science and Technology

This book intends to review the current status of the systematic knowledge related to the chemical composition, production and applications of edible oils. It is written principally based on the data that have been published in scientific journals, academically specialized books or internet websites and author’s secondary innovation. The knowledge introduced in the book should be very useful for farmers or oilseeds processing enterprises, or scientists who are interested in developing their sustainable resources and their processing technology. They are also worthwhile as reference materials for training students intending to work with oilseeds production or processing industry. The central scope of this book is associated with the review of recent research results or developments and future tendency with respect to the chemical components, production and applications of edible oils. More than 40 species of oil seeds or raw materials have high oil content. Oils from these raw materials are edible. In addition to providing essential fatty acids and energy, all edible oils also contain fat-soluble vitamins such as vitamin E and carotenoids (pro-vitamin A) and other functional compounds such as sterols, phospholipids, squalene, etc. which are reviewed in this book. Some particular species of edible oils also contain unique functional compounds, which are not present in other kinds of edible oils. The world’s production of edible oils, their processing technology and their application in the food industry or other industries are also reviewed in this book. Especially, with respect to the extraction of edible oils, an advanced aqueous method recently published has achieved a high recovery rate of oils with high quality, which has a different mechanism as compared with the traditional aqueous method using large quantities of water. The de-oiled residue produced by this aqueous method can be applied to the food industry. This kind of aqueous method has the potential of knocking other methods out and becoming a classic procedure for the commercial production of edible oils in the future. The first chapter of this book is about the overview of edible oils while the following chapters review major specific edible oils that are popularly produced and consumed in the world.
Handbook of Chickpeas: Nutritional Value, Health Benefits and Management
Albert T. Lund and Noah D. Schultz
In series: Nutrition and Diet Research Progress
In series: Food Science and Technology
2019.
Hardcover: 978-1-53616-274-2. $230.00.

Legumes are an important source of proteins, carbohydrates, vitamins, minerals, and dietary fiber. Chickpea is one of the most consumed legumes in the world. It is an affordable food product for people who cannot get animal protein, giving them a nutritious substitute in their diet. As such, Handbook of Chickpeas: Nutritional Value, Health Benefits and Management discusses the current information regarding the nutritional value of chickpea. Following this, the authors highlight the nutritional value of domesticated Kabuli chickpeas used in different forms, as well as the impact of different factors which regulate the nutritional value. The authors then explore the nutritional value, health benefits, and uses of desi chickpeas in comparison to Kabuli chickpeas. Current information is presented regarding the amino acid profile and nutritional protein quality in raw and processed chickpea seeds and flours, the health or nutraceutical effects of chickpea protein isolates, hydrolysates or bioactive peptides and the generation of selenized proteins during sprouting and their antioxidant and anticancer potential. The demand for gluten-free products is increasing since the prevalence of gluten-related disorders is rising. As such, chickpea is studied in the context of replacing wheat/gluten in some types of gluten-free food to improve the quality of the gluten-free diet. Chickpea is also studied as a dairy-product substitute since it represents a good source of protein, iron, and fiber. Chickpeas are composed of interesting amounts of protein, fibers, iron, zinc, and others, arousing interest by vegetarians. Therefore, the use of chickpeas is studied as an important ingredient in a vegetarian diet to contribute to nutritional quality. The authors present the way in which legume proteins can be used to fortify some foods to increase nutritional value and balance amino acid content. The most important of these foods are bakery products. Current information related to starch digestion and glycemic index of raw/processed chickpea flours and starch isolates, undigested carbohydrates content in raw/processed chickpea and health effects of chickpea digestible and undigestible carbohydrates is also presented. Chickpea seeds are vulnerable, both in the field and in storage conditions to attack by several insect pests of economic importance, whereby infested grains lose their viability. Therefore, basic steps in order to control insects in warehouse or processing plants that must be followed are: monitoring for infestation detection, identification of the problem and insect control measures. Traditionally, preferred control options are carbamate and pyrethroid sprays as soon as the threshold has been reached, as insects grow rapidly and a few days delay in spraying can result in major crop damage and increased difficulty in control. The final study proposes that chickpea protease inhibitor concentrates exerted anti-genotoxic effects on LNCaP cells, supporting previous findings that Bowman-Birk inhibitors and protease inhibitors have a protective effect on oxidative damage. Chickpea may therefore play a role in prostate cancer prevention, however, further research is needed to fully understand the molecular mechanisms involved.
Microbial Enzymes and Additives for the Food Industry
Amit Kumar (Department of Biotechnology, College of Natural and Computational Sciences, Debre Marks University, Ethiopia), Mukesh Yadav (Department of Biotechnology, Maharishi Markandeswar (Deemed to be University), Mullan-Ambala, India) and Nirmala Sehrawat (Department of Biotechnology, Maharishi Markandeswar (Deemed to be University), Mullan-Ambala, India)

In series: Food Science and Technology

The growing food industry is currently employing a large number of microbial products. Microbial products are of biological origin and are considered safe as compared to synthetic and chemical formulations. Microbial products are used in the processing or manufacturing of a variety of food products. These days, fermented foods have become very common. Enzymes, pigments, and organic acids of microbial origin are common in the food industry. Demand for microbial products and metabolites are continuously increasing, and microbial products are an area of commercial interest for the food biotechnology and microbial biotechnology industries. This book covers microbial enzymes along with their utilization in the food industry. Important enzymes such as amylase, inulinase, pullulanase, protease, lipase, naringinase, cellulose, xylanase, pectinase, and asparaginase have been discussed, along with their potent applications in the food industry. Also, microbial polysaccharides, organic acids, and pigments of microbial origin have been discussed. This book will provide important insight regarding microbial enzymes and additives for the food industry now and in the future. This text will be helpful for graduate, post graduate students, researchers, and industry professionals, extensively engaged in the area of food science and technology, food biotechnology, and industrial biotechnology.

Occurrences, Structure, Biosynthesis, and Health Benefits Based on Their Evidences of Medicinal Phytochemicals in Vegetables and Fruits. Volume 12
Noboru Motohashi, Ph.D. (Meiji Pharmaceutical University, Kiyoshi-shi, Tokyo, Japan)

In series: Food and Beverage Consumption and Health
In series: Biochemistry Research Trends

Summary of these eight titles is made as follows: Chapter 1: Ginkgo biloba has long been used as a folklore medicine in China, India and these neighboring countries. Ginkgo biloba contains diverse phytochemicals such as terpene trilactones (bilobalide and ginkgolides A, B, C and J), flavonol glycosides, biflavones, procyanidins, alkylphenols, simple phenolic acids, 6-hydroxykynurenic acid, 4-O-methylpyridoxine and polyprenols. Gincholinic acid in ginkgo nuts showed very limited cytotoxicity and inhibits human immunodeficiency virus (HIV) protease activity to effectively suppress HIV infection; Chapter 2: Ganoderma lucidum (G. lucidum) (Rei-shi) mycelia (MAK) can be expected to prevent or alleviate organ damage as a functional food; Chapter 3: Water soluble carotenoids of yellow plant pigment in saffron and gardenia are mainly crocetin (1) and its glycosyl ester. Crocetin-MGE (3) was rapidly absorbed. Crocetin-MGE (3) is rapidly and efficiently absorbed as such and is metabolized to crocetin (1); Chapter 4: Function of 3'-epirutein (3) in total xanthophyll feeding orally in rats has been evaluated. As a result, the dose-corrected Cmax and AUC0-24h of (3R,3'R,6'R)-lutein (1) appeared to be doubled in presence of 3'-epirutein (3); Chapter 5: Green tea was examined for bilateral ovariectomized (estrogen deficient) postmenopausal rat model to affect memory, learning and cognition. Green tea showed to provide neuroprotection, and probably support neurogenesis for human health, from the perspective of histopathology; Chapter 6: Daily consumption of fruits is essential to have a healthy life. However, it is hard to say that they are taking enough fruits because of expensive fruit, and their consciousness of health to their fruits. However, regular fruit intake is known to reduce the incidence of lifestyle diseases such as cardiovascular diseases, hypertension, diabetes and so on. For this reason, the authors tried to prevent these lifestyle diseases by low cost unusual fruits in Africa; Chapter 7: Three kinds of vegetables inhabiting sub-Saharan Africa (SSA) were selected as plant-derived functional ingredients. As a result, three uncommon vegetables showed health benefits against measles, yawning, conjunctivitis, hypertension, liver dysfunction, ocular pain, ear pain, breast cancer and other diseases; Chapter 8: The fruit of the Annonacea family has been used as a folk medicine. The main functional ingredient in Annonacea is acetogenin and its analogs. Acetogenins have been known for a wide range of effects such as antitumor action, antiparasitic action, antibacterial insecticidal action, immunosuppressive action and so on. These diverse effects of acetogenins have been suggested to be promising for the development of new drugs to treat various diseases such as lifestyle diseases.
The predicted depletion of fossil fuels has mobilized society and the scientific community towards the use of alternative and sustainable sources of energy. A promising alternative could be the valorization of oil bearing crops via transesterification reactions towards the production of biodiesel. As such, the first chapter of Oilseeds: Production, Varieties and Management Practices assesses the most significant contributions in the homogeneous and heterogeneous catalyzed transesterification under acidic or alkaline conditions considering the parameters affecting the processes as well as biodiesel yields. The following chapter highlights the synthesis of copper soaps derived from edible oils, the synthesis of complexes with 2-amino-6-methyl Benzothiazole derived from already synthesized copper soaps for comparative studies, spectral studies, thermogravimetric analysis of copper soaps derived from groundnut, sesame, neem and karanja, and more. In the subsequent chapter, the authors go on to highlight biocidal studies performed to assess the comparative toxicity on two easily available fungi, Alternaria alternata and Aspergillus niger. The concluding section of this compilation examines synthesis of copper soaps with increasing carbon atom p-substituted benzthiazoles.

Quinoa offers an alternative to classical cereals in celiac diet because its seeds are gluten-free. Concerning its employment in food application, quinoa offers an alternative to classical cereals in celiac diet because its seeds are gluten-free. Quinoa (Chenopodium quinoa Willd) is a pseudocereal of Andean origin that is becoming more and more popular in Europe, Asia and the United States of America because it is a good source of different nutrients, rich in antioxidant compounds and it offers an alternative to classical cereals in celiac diet because its seeds are gluten-free. The authors of Chapter Six described the employment of the fermentation process to improve technological, nutritional and sensory quality of quinoa in order to obtain the fortification of conventional or novel foods. The aim of chapter seven is to review the available studies on the use of quinoa as a bread making ingredient. In Chapter Eight, the authors examined the quality characteristics of cereal-based foods enriched with quinoa flour and inulin with a different degree of polymerization in order to obtain new fortified breads and pasta with lowering glicemic index effect. Chapter Nine evaluates studies carried out to develop healthier gluten-free products, considering sensory and technological aspects of quality to help promoting the quality of life for people who need to follow a gluten-free diet. Chapter Ten critically reviews studies on the use of quinoa as a milk substitute on dairy products since it presents a good source of protein with a low glycemic index. In Chapter Eleven authors proposed a novel icing system based on the use of an aqueous/ethanolic saponin-free quinoa extract to obtain improvement in the quality of both lean and fatty fish species during commercialization under chilled conditions. Finally, nutritional implications of quinoa intake have been revised in Chapter Twelve.
Senn’s War Time Cooking Guide
C. Herman Senn
In series: Food Science and Technology
Softcover: 978-1-53615-023-0. $82.00.
e-book: 978-1-53613-797-2. $82.00.
This book, written by Charles Herman Senn (1864-1934) and originally published in 1915, brings the old recipes and techniques of cooking from during the war. It provides a unique window into peoples’ lives and how they survived during the war. The book is broken down into the following sections: • Recipes for Soups • Fish Preparations • Meat Dishes • Vegetables • Breakfast and Supper Dishes • Sweets, Puddings • Cakes and Pastries • Invalid Dishes • Sauces • Management of Gas Stoves • Inexpensive Family Meals • Some Economy Hints (substitutes, for example, the can be used for Meat and Fish which were scare, how to avoid waste in food scraps and how to avoid waste in cooking, etc). • Index of Recipes.

Sugar: Processing, Production and Uses
Fredrick Caras
In series: Food Science and Technology
Hardcover: 978-1-53615-396-5. $160.00.
A variety of analytical techniques have been developed to determine the content of sugars in honey, such as spectroscopic, chromatographic, and electrochemical ones. In this collection, the authors present the cross-section of results on sugar composition, obtained by contemporary analytical methods used in honey authentication. The following chapter addresses how sago fronds can be used to produce sugar, which contains cellobiose and glucose as the main sugars at about 10 g/L and 5 g/L, respectively. SFS has been used as the complete fermentation medium for the production of L-lactic acid using Lactis IO-1 without the need for further amendment. Next, the authors address the impact of processing on the physicochemical characteristics and elemental composition of brown sugar produced in Brazil. 15 brown sugar samples of 5 distinct brands in 3 different were evaluated, and the moisture contents of the samples were determined by Karl Fischer titration, and thermogravimetric analysis determined the melting point. The typical process of producing solid sugar from sugarcane and mapping by-products and residues that are generated at each stage is presented. By-products are characterized and the technologies prominent in energy reuse are addressed. Recent studies, applications, trends, challenges and constraints for the future use of sucrose and sucrochemistry derivatives are also discussed. This represents a diversification-promising productive concept of green organic chemistry, based on an accessible, low-priced, ecological and renewable source, which stands in the short and long terms as the best opportunity to compete economically with petrochemicals. In addition, several factors related to the sustainability production of sugar as a raw material, that include innovative production processes, natural and artificial substitute sweeteners, geopolitics, medical research and new end uses are discussed. The concluding work seeks to examine the changes in the properties of elastomeric compounds as a consequence of conventional additives such as zinc oxide and stearic acid by sugar cane bagasse, a green option for obtaining environmentally friendly elastomeric compounds.

The Chemistry of Cookery
W. Mattieu Williams
In series: Chemistry Research and Applications
Hardcover: 978-1-53615-268-5. $230.00.
The kitchen is a chemical laboratory in which a number of chemical processes are conducted by which our food is converted from its crude state to a condition more suitable for digestion and nutrition, and made more agreeable to the palate. The Chemistry of Cookery shows that modern chemistry can throw into the kitchen a great deal of light that can help the cook in doing his or her work more efficiently.

General Chemistry

Advances in Chemistry Research. Volume 51
James C. Taylor
In series: Advances in Chemistry Research
Hardcover: 978-1-53615-063-6. $250.00.
In this compilation, the authors begin by highlighting the recent developments in asymmetric 1,4- and 1,2- additions to α, β-unsaturated carbonyl compounds. The recent finding of Cu (I)-catalyzed asymmetric 1,2-addition of Grignard reagents to α, β-unsaturated carbonyl compounds, as well as aromatic ketones, has categorically revolutionized catalytic asymmetric
reactions. This compilation also aims to use the well-known coordination preference of zinc in phthalocyanine and porphyrin ligands in correlation with supramolecular systems. The light-absorption process in dye-sensitized solar cells is studied using the time-dependent density functional theory. In recent years, a series of investigations on detonation wave formation in acetylene have been published. In these studies, it was shown that the formation of detonation proceeds entirely due to the energy released during the condensation of carbon nanoparticles during the growth of poly-aromatic hydrocarbons. The results of these studies are summarized and practical applications are discussed. The authors discuss aromatic amines, derivatives of aromatic hydrocarbons containing an amino group/an amine group/nitrogen atom in their structures. These compounds represent one of the most important classes of industrial and environmental chemicals. Three groups have been studied: monocyclic, polycyclic, and heterocyclic aromatic amines, which are used as intermediates in azo dye manufacturing, pigments, drugs, antibiotics, antidepressants, pesticides, and other industrial products. In the closing study, the GC-MS/MS method has been developed for the determination and quantification of 35 multiclass pesticide residues in chili samples. Pesticides were selected from different families including organochlorines, organophosphorus, carbamates, pyrethroids, triazines, triazoles, and pyrazoles. The QuEChERS-dSPE method was used for the extraction of pesticide residue.

Advances in Chemistry Research. Volume 52
James C. Taylor
In series: Advances in Chemistry Research
The opening chapter discusses recent investigations carried out from the academia, industry and research organizations about technology in the treatment of aqueous solutions containing any type of metal. Chapter two describes naphthalene catabolism genes, their organization and function, and the role of extrachromosomal DNA in naphthalene oxidation. Factors affecting natural PAH biodegradation are estimated; model systems to study naphthalene and phenanthrene microbial utilization are presented in detail, focusing on mathematical modeling of biodegradation processes in the laboratory microcosms. Moreover, the authors also described the mobility of naphthalene degradation-related genes by horizontal gene transfer in gram-negative and gram-positive bacteria. The authors go on to review attempts to produce more reasonable values by taking the relative electronegativities of the bonded atoms into account. The experience of the research team in the field of cementation processes in which tin participates as a metal-cementator or tin is reduced by another metal from its compounds dissolved in solutions is generalized in the concluding chapter.

Advances in Chemistry Research. Volume 53
James C. Taylor
In series: Advances in Chemistry Research
Hardcover: 978-1-53615-760-4. $250.00.
The opening chapter of Advances in Chemistry Research. Volume 53 reviews the many theoretical predictions of nitrogen oligomers and discusses their potential applications. Predictions of nitrogen oligomers encapsulated in carbon nanotubes, free standing oligomers and single crystals of nitrogen oligomers are also discussed. Additionally, a focus on the synthesis of various electron push and electron pull units towards the construction of push-pull unit decorated oligomers and their application as organic optoelectronic materials is presented. The authors provide a summary of relevant methodologies for using an alcohol as reducing agent. The authors go on to examine how yellow laccases differ from blue laccases in fungal strains. Laccase is an oxidoreductase with four copper ions in two active sites, which catalyzes the oxidation of reduced substrates usually phenols or aromatic amines, coupled with the reduction of molecular oxygen to water. The penultimate chapter discusses the novel features of biphenyl based systems and how their rigidity and compactness provide detectable signals even for poorly conducting conformations. A literature review on ethylbenzene extraction using ionic liquids is presented in the final section and the results are discussed in the light of selectivity and distribution coefficients since both of them affect process efficiency.

Advances in Chemistry Research. Volume 54
James C. Taylor
In series: Advances in Chemistry Research
Hardcover: 978-1-53615-828-1. $250.00.
The first chapter of Advances in Chemistry Research. Volume 54 investigates the structure-function relationships of glycans. A recent structural analysis of oligomannose glycans, based on biophysical methods (including solution nuclear magnetic resonance and X-ray crystallographic analyses) are presented and discussed. A summary of the history, clinical uses, and pharmacokinetics of polyethylene glycol interferon are presented. Important features regarding its clinical efficacy in combination with new antiviral agents like ribavirin, telaprevir, entecavir, tenofovir, adefovir, sofosbuvir and ledipasvir are also discussed. The fluorescence properties of anthracene based ligands are proposed to be suitable to design
sensors for cations as well as anions. Some of the complexes of anthracene-based ligands are reported to have potential for light-emitting devices. Various quantum chemical properties, dipole moments, bond lengths, charges, total electronic energies, the highest occupied and lowest unoccupied molecular orbital energies and the interfrontier molecular orbital energy gap values are obtained and compared. An empirical equation is derived for calculating the free formaldehyde concentration in alcohol-formaldehyde systems at various temperatures and total formaldehyde concentrations, as well as an equation for evaluating solvent concentrations. In the final study, the authors exploit the intense fluorescence behavior of luminol for a quantitative understanding of hydrogen bonding behavior and its interaction with several biological media, with the help of steady state and time-resolved measurements as well as density functional theory calculations.

Advances in Chemistry Research. Volume 55
James C. Taylor
In series: Advances in Chemistry Research
Hardcover: 978-1-53616-105-2. $250.00.
The influence of individual groups in the monomeric unit of polyamides on their physical properties is analyzed in the opening chapter of Advances in Chemistry Research. Volume 55. The following chapter focuses on selected aspects of the chemistry and biology of triclabendazole, and includes not only a description of the impact of the disease fasciolosis, but also the pharmacokinetics and metabolism of triclabendazole. The author of the penultimate chapter focuses on the catalytic reaction mechanism of H2 release by solvolysis, hydro-thermolysis, and thermolysis reactions of borates. Recent advances in the fabrication of various catalysts are discussed, and recent investigations of their internal and external properties are described. The final review attempts to summarize the medicinal properties, health benefits and clinical applications of papaya. Furthermore, research and exploitation of high value-added products from papaya is discussed.

Advances in Chemistry Research. Volume 56
James C. Taylor
In series: Advances in Chemistry Research
Hardcover: 978-1-53616-219-6. $250.00.
Advances in Chemistry Research. Volume 56 opens with a discussion on silica particles surface-modified by polyfunctional fragments containing acidic amino groups, specified for biomedical applications. Approaches to the immobilization/surface assembly of oligonucleotides on the surface of silica nanoparticles to create hybrid organic-inorganic particles are also considered. Following this, the authors investigate antituberculous compounds: isoniazid, pyrazinamid, salminazid, vanilin isonizid and their bioactive structural analog, p-aminobenzoic acid. The solubility of drug substances a key parameter concerning formulation development in the pharmaceutical industry. The results of the application of the inverted Kirkwood-Buff integrals method to aqueous mixtures of many organic solvents as well as non-aqueous mixtures of such solvents are presented. Comparison with another method that yields similar information, the quasi-lattice quasi-chemical method, is made. The authors discuss the most common component of water scale, calcium carbonate, the solubility of which falls with increasing temperature. Precipitated CaCO3 may be a mixture of crystalline phases, amorphous and hydrated phases. The crystalline phases are calcite, aragonite and vaterite. Additionally, the authors provide a comprehensive review of several isolation techniques and analytical aspects for the quantitative determination of catechin. In the penultimate review, the effects of magnetic field on liquid/solid inhomogeneous reaction in aqueous solution, i.e., metal deposition reaction and chemical garden reaction, are briefly discussed in terms of the magnetic force on paramagnetic Cu2+ ion and the Lorentz force on all ions. In conclusion, the formation of ensembles from (NaHCO3·2H2O·2CO2)n in a saturated salt solution are discussed, and the effect on the ensembles of (H2O·2H2O·2CO2)n and (NaHCO3·2H2O·2CO2)n clusters of shock waves are studied.

Advances in Chemistry Research. Volume 57
James C. Taylor
In series: Advances in Chemistry Research
2020.
Hardcover: 978-1-53616-378-0. $250.00.
Advances in Chemistry Research. Volume 57 begins with a focus on structures which core-modified porphyrins and derivatives adopt, as well as a comparison of electronic properties, including aromaticity, of core-modified porphyrins and common tetrapyroles. Perspectives of studies and applications of core-modified tetrapyroles are considered as well. Following this, the authors provide a brief introduction to solvation processes in pure solvents, followed by an extension of the topic to mixtures, and a thorough analysis of preferential solvation phenomena. In one study, Rhodobacter sphaeroides cytochrome c oxidase is prepared, in which n terminal histidines 3, 7, and 10 of subunit III have been replaced with glutamine residues and enzymatic activities of the isolated mutant enzyme assessed. Different aspects of the problem of the oxo-atom transfer of organometallocal complexes in oxidation reactions of some organic compounds with dioxygen, under UV-irradiation, are discussed. Examples demonstrating the catalytic properties of dioxo-Mo-complexes in oxidation of the
Advances in Chemistry Research, Volume 58

James C. Taylor

In series: Advances in Chemistry Research

2020.
Hardcover: 978-1-53616-519-7. $250.00.

Advances in Chemistry Research. Volume 58 first characterizes electrochemical oxidation processes from an ecotoxicological perspective. This approach allows for the evaluation of the influence of electrochemical degradation parameters, such as electrode material or type of electrolyte, in the modulation of toxicity under different scenarios. Following this, the authors present a collection of existing knowledge on electro-fenton and anodic oxidation electrochemical processes. The choice of electrode materials plays an important role in both processes for better efficiency. A standardized procedure is proposed for analyzing humic samples of various genesis consisting of four successive methods of analysis. The results obtained in this case present a set of, semi-quantitative and quantitative parameters in the macromolecule of carboxyl, aromatic, polysaccharide and aliphatic fragments. A highly effective adsorbent for p-chlorophenol is been synthesized using magnetite nanoparticles coated with humic acids. The adsorbent is synthesized via co-precipitation of a mixed Fe3+ and Fe2+ solution using NH4OH 25% at pH 11 followed by the rapid addition of humic acids solution in NaOH 1 M. This collection also reviews the spectral and luminescent properties of humic acids, as well as identifies the impact of humic acids on the effectiveness of organic compounds photodegradation. In the concluding study, the water quench test is applied as an experimental method for thermal shock resistance testing, and the authors provide a morphological analysis of the samples before and during the testing.

Imines: An Overview

Gordon Sjögren

In series: Chemistry Research and Applications

Softcover: 978-1-53616-007-9. $95.00.
e-book: 978-1-53616-008-6. $95.00.

In the opening chapter of Imines: An Overview, attempts will be made to provide a brief survey of di-imines derived from benzil hydrazones through imine chemistry. Imines are compounds containing an azomethine linkage C=N connected to hydrogen or carbon atoms. Possible reaction mechanisms of benzocyclonhexanone oximes and p-benzil hydrazones through imine chemistry. Imines are compounds containing an azomethin

Protonation: Properties, Applications and Effects

Ale Germogen

In series: Biochemistry Research Trends


The opening chapter of Protonation: Properties, Applications and Effects deals with the protonation and 3D structural analysis of glycylhomooligopeptides and their silver(I) complexes. The authors discuss new evidence supporting the empirical adequacy of the model equation, and the advantages of this methodology explored. The concept of protonation is reviewed and discussed from the physico-chemico-biological perspectives, exploring the format of examples that govern a broad spectrum of the acts of protonation. The primary is to present the key examples for better understanding the title concept, its unity and purpose. The concluding review focuses on the physical properties of protic ionic liquids, such as their viscosities, electric conductivities, diffusions, densities, and polarity parameters. This may be useful in interpreting the relationship between molecular structures and physicochemical properties based on their unique intermolecular interactions caused by protonated chelate amines.
knowledge and understanding of such an important class of compounds, is presented. One application of long chain n-alkanes is to take a part of the composition of several fuels and lubricants. In order to produce them with beneficial cold-flow properties, the linear alkanes, commonly designated as waxes, must undergo an upgrading process. The authors present the several catalytic systems used to transform linear to branched long chain alkanes, from the more traditional processes to the current research trends. On the other hand, the use of alkanes as raw materials in organic synthesis has been heavily investigated in recent years; given how abundant and cheap they are as a carbon source. As such, the authors focus on the use of C-scorpionate transition-metal complexes as homo- or heterogeneous catalysts for the challenging selective oxidation of alkenes, under mild and unconventional conditions, to functionalized value-added organic compounds. Regarding alkane’s functionalization, the introduction of a halogen atom at a specific site in an alkyl chain provides an avenue for the creation of novel synthetic routes. Accordingly, the state-of-art selective halogenation of unactivated C-H bonds is presented and discussed. Lastly, the serious pollution problem of prevalent alkanes in water bodies is addressed by presenting the most cost effective and environmentally relevant emerging technologies to recover the natural balance of ecosystems.

Cycloaddition Reactions: Advances in Research and Applications
Davor Margetic, Ph.D. (Rudjer Boskovic Institute Bijenicka, Zagreb, Croatia)

In series: Chemistry Research and Applications

Chapter 1 reviews recent progress in aryne cycloaddition reactions. The important contributions to the methodology of preparation of arynes in mild reaction conditions are described. Among them, the in-situ generation of arynes via the reaction of ortho-OTMS aryl triflates with fluoride ions is the most applicable. By this method, a variety of arynes was employed in the synthesis of nitrogen and oxygen containing 5-7 membered heterocycles. Instructive examples of applications in the total synthesis of natural products (rademachol, (+)-tylophorine, calothrixins, tubingensin B, (+)-hinckdentine A, cossonidine and (methyl)teretifoliones B) are presented. The importance of O-trimethylsilylaryl triflates and fluoride ions methodology for aryne generation is demonstrated in preparation of bioactive molecules and their applicability in medicinal chemistry research. Chapter 2. In addition to thermal reactions, photocycloaddition reactions are a complementary tool in synthetic organic chemistry. The employment of photochemical cycloaddition reactions proceed through different reaction mechanisms and provide access to products which could not be obtained in classical reaction conditions. This chapter is a review of excited state transformations of heteroarilenes to polycyclic structures featuring bicyclo[2.1.1], bicyclo[3.1.0] and bicyclo[3.2.1] moieties. Alongside the main products of these types, often unexpected transformations take place. Some of the photocycloaddition products display interesting biological activity. Chapter 3 reports the results of original scientific research with regards to the application of click reactions in the synthesis of 1,4-disubstituted 1,2,3-triazole conjugates with ribofuranosides and reversed nucleosides. An efficient method for the synthesis of 1,2,3-triazole bridged glycoconjugates with potential biological activity is described and fully supported with the 1H and 13C NMR spectroscopy of novel products. Chapter 4 is a comprehensive review of isocyanide-based cycloaddition reactions. This functionality is highly reactive and participates in many different cycloaddition reactions and annihilations. Employment of isocyanide cycloaddition reactions led to the preparation of diverse heterocyclic structures, including asymmetric ones and their applications in medicinal chemistry, in the agricultural, chemical, and supramolecular fields, as well as in the materials sciences. Chapter 5 gives a review of the synthesis of 1,5-benzodiazepine-2,4-dione derivatives via 1,3-dipolar cycloaddition reactions. Functionalization of 1,5-benzodiazepine-2,4-dione by the cycloadditions of nitrimines, nitrile
oxides or azides led to diverse heterocyclic substitutions at positions 1, 3 and 5. Molecular structures of novel products were confirmed by X-ray crystal structure analyses. Chapter 6. Nitrile imines, nitrile oxides and azides were employed in 1,3-dipolar cycloaddition reactions with allyl and propargyl substituted 1,5-benzodiazepine, quinoxaline-2-thiones, benzimidazole and isatin to afford derivatives with heterocyclic substituents: pyrazol, isoxazol and triazol. Single crystal X-ray studies of novel products were described, and their biological activity was also reported. Chapter 7. Guanidines are commonly occurring in nature and constituents some natural products with cyclic structures. Various cycloaddition reactions leading towards cyclic guanidine structures were reviewed. The review also summarized cycloaddition reactions in which functionalized guanidines were acting as the reaction partners.

Furan: Chemistry, Synthesis and Safety
Ida Bailey
In series: Chemistry Research and Applications
Softcover: 978-1-53615-390-3. $82.00.
e-book: 978-1-53615-391-0. $82.00.
In this compilation, the authors discuss the reactions of furans and formylfurans with aqueous hydrogen peroxide which are caused by peculiarities in the chemical behavior of these reagents, as well as their availability. It is known that the furan cycle can demonstrate properties of aromatic compounds, dienes and enol ethers depending on their structure and reaction conditions. Furans are used in medicinal chemistry as useful intermediates in the synthetic transformations aimed at the development of new pharmaceutical agents. As such, the authors also disclose the direct and atom-economical synthetic route to new [3,2-b]furan-fused pentacyclic triterpenoids via 5-exo-dig cyclization of accessible 2-alkynyl derivatives of betulonic, usonic and oleanonic acids in the presence of the strong bases or catalyzed by transition gold complexes. The closing chapter presents research data published by the authors in the last five years on the new developed one-pot synthesis of tetrasubstituted furans by the reaction of symmetrical and unsymmetrical acetylenes with carboxylic acid esters and EtAlCl2 in the presence of metallic magnesium and the Cp2TiCl2 catalyst.

Strontium Titanate: Synthesis, Properties and Uses
Alexander Tkach and Paula Vilarinho (Department of Materials and Ceramic Engineering, CICECO, University of Aveiro, Aveiro, Portugal)
In series: Materials Science and Technologies
Hardcover: 978-1-53615-437-5. $230.00.
Strontium titanate (STO) is a classical high-permittivity perovskite material known since the 1940s. Although incipient ferroelectric behaviour of SrTiO3 was thoroughly studied during several decades, many new physical phenomena in STO and its solid solutions have been predicted theoretically and observed experimentally in past few years. The obtained results were successfully applied for the development of modern electronic devices on the basis of macroscopic and nanostructured samples. Besides the incipient ferroelectricity, properties of STO include a structural phase transition, semiconductivity, superconductivity, and thermoelectricity, among others. This book provides the latest information on the developments of field preparation, characterization, and application of STO and the materials based on it, with perspectives on future research. It collects the contributions of several established researchers from around the world on the fundamental mechanisms, processing, and possible uses for STO-based materials in the form of single crystals, thin films, and ceramics. This book covers a broad range of topics related to STO and materials based on it, including an overview of lattice dynamics and magnetic resonance characterization, Sr/Ti ratio, and stress induced modification of the properties, modelling, and simulation of improper ferroelectricity and multiferroic phases, dielectric responses and thermoelectric performance for tunable devices, and energy harvesting applications, respectively.

Thiols: Structure, Properties and Reactions
Carlos C. McAlpine
In series: Chemistry Research and Applications
Softcover: 978-1-53615-599-0. $82.00.
e-book: 978-1-53615-600-3. $82.00.
The thiol (SH) is an essential functional group in the biological system. The -SH groups play a catalytic and structural role in enzymes and proteins that participate in the defense against reactive oxygen species, detoxification, signal transduction, energy production, apoptosis, and other biological functions. In this compilation, the authors begin by exploring how the inorganic and organic forms of mercury interact with these macromolecules. In the following study, thiol-methacrylate networks based on a tetrafunctional thiol and dimethacrylate monomers were prepared by both photopolymerization and amine-catalyzed Michael addition reaction. The progress of the polymerization reaction was monitored by FTIR and
Raman spectroscopy. The cured materials were characterized by measuring the glass transition temperature, the flexural modulus, and the compressive strength. In the closing study, a novel and efficient protocol is presented which has been developed for the synthesis of symmetrical disulfides from thiols using thionyl chloride as the sole oxidizing agent at ambient conditions. Also, a tentative mechanism has been reported for the reaction.

Trehalose: Sources, Chemistry and Applications
Elżbieta Łopieńska-Biernat (Department of Biochemistry, Faculty of Biology and Biotechnology, University of Warmia and Mazury in Olsztyn, Olsztyn, Poland) and Robert Stryiński (Department of Biochemistry, Faculty of Biology and Biotechnology, University of Warmia and Mazury in Olsztyn, Olsztyn, Poland)

In series: Biochemistry and Molecular Biology in the Post Genomic Era
Softcover: 978-1-53614-944-9. $95.00.
e-book: 978-1-53614-945-6. $95.00.

Trehalose as a natural disaccharide presents in plants, invertebrates, fungi and prokaryotes, but not in mammals. A white, odorless, crystalline powder with a sweet taste, it is best known as a source of energy and protectant to survive harsh environmental conditions in many organisms, but its applications cover a wide array of disciplines. Research engagement is stimulated by interest in biotechnology; the use of trehalose in processes related to industry, agriculture, pharmacy and medicine. Considering both the advantages and disadvantages of this sugar for humans, Trehalose: Sources, Chemistry and Applications emphasizes the importance of trehalose in both basic and applied research and presents an overview of its biological significance. We have collected innovative research on the properties of trehalose and its application in industry or medicine; among others, the impact on the quality of fruit products, higher thermal resistance of wood, as well as innovative pharmaceuticals is also included.

Special Topics

Crystal Violet: Production, Applications and Precautions
Victor Duffet

In series: Chemistry Research and Applications
Softcover: 978-1-53615-806-9. $82.00.
e-book: 978-1-53615-807-6. $82.00.

Crystal Violet: Production, Applications and Precautions opens by presenting the main factors influencing the metachromatic phenomenon. The hypsochromic effect is due to the symmetry of the molecule providing the common electronic signal around the central carbon atom. Next, the authors discuss further modification of the adsorbents in an effort to improve their adsorption capacity and make them feasible for use in field applications. The closing chapter reports on the removal of crystal violet dye from water using surfactant-modified zeolite from coal fly ash, surfactant-modified zeolite from coal bottom ash and nanosilica from sugarcane waste ash.

Eugenol: Biosynthesis, Toxicity and Uses
Megan Shelton

In series: Chemistry Research and Applications
Softcover: 978-1-53615-429-0. $82.00.
e-book: 978-1-53615-449-8. $82.00.

In this compilation, the use of eugenol for the development of new active packaging material is presented using two different technologies for two polymer matrices. First, linear low density polyethylene films were impregnated with eugenol using supercritical CO2 assisted impregnation. In a second approach, eugenol was grafted onto cellulose using a polycarboxylic acid as linking agent for the preparation of a bioactive paper. In both cases, the effect of different process conditions on the final material properties was investigated. Following this, the authors discuss advances concerning the antiprotozoal activity of eugenol as well as its natural and synthetic derivatives. This study demonstrates that chemical modifications of eugenol can afford promising antiprotozoal compounds. In the closing chapter, a revision of the eugenol based thermosetting materials is be presented. This includes not only their preparation, but also some important characteristics and applications.
Iron (III) Phosphate: Production and Their Uses in Organic Synthesis
Farahnaz K. Behbahani, PhD (Associate Professor and Member of the Scientific Board, Department of Chemistry, Karaj Branch, Islamic Azad University, Karaj, Iran)

In series: Chemistry Research and Applications
Hardcover: 978-1-53615-112-1. $230.00.

This book presents the synthesis, properties, uses, structure, and safety of iron (III) phosphate, as well as its use as an intercalation electrode in lithium-ion batteries, despite having low electronic conductivity. In the synthesis of organic compounds, iron (III) phosphate catalyzes the one-pot synthesis of dihydropyrimidinones and thiones, and 2, 4, 5-triaryl substituted imidazoles. It also results in the acetylation of alcohols and phenols, tetrahydropranylation and tetrahydrofuranylation of alcohols and phenols, as well as the synthesis of polychlorquinoline derivatives, 2-substituted benzimidazoles, 1, 2-disubstituted benzimidazoles, 1,2,4,5-tetra-arylated imidazoles, and bis(indolyl)methanes. Furthermore, it catalyzes the one pot three-component manncich reaction, 2-substituted imidazolines, β-amido carboxyl compounds, 1,4-dihydropyridines, 4,4'-diaminotriaryl methanes-leucomalachite materials, N-substituted pyroles, 7,10,11,12-tetrahydrobenzo[c] acridin-8(9h)-ones, and 4,6-disubstituted 2-aminoypyridine-3-carbonitriles. It results in the one-pot synthesis of octahydroquinazolinones, the conversion of tetrahydrofuran ethers to acetates, dihydropyrimidinones, thiones, as well as β-amino ketones. In the author’s opinion, this book could be beneficial for researchers, graduates, and post graduate students, as well as for professionals in the chemical and medicinal industries in the preparation of raw materials using green methods.

Occupational Health and Safety in the Chemical and Biological Laboratory Handbook
Maria Pia Gatto, Ph.D (Chemical Researcher, Inail, Department of Occupational and Environmental Medicine, Epidemiology and Hygiene (DiMEILA), Italy)

In series: Public Health in the 21st Century

Occupational health and safety refers to the whole series of prevention measures and protection, technical measures, organizational solutions, and procedures that must be adopted by the employer to avoid dangerous situations for their employees. While it is true that total security exists in the absence of dangers, and this is a difficult concept to translate into real life, in the absolute sense, it is also true that the application of safety rules makes the occurrence of adverse events and incidents more difficult, and it always results in a better quality of life. Each analytical laboratory should provide its own “Good Laboratory Practices” and procedures must be the result of the experience and must be known, correctly interpreted, shared, and respected by all the staff of laboratory. The idea of creating a manual on occupational health risks in a chemical and biological analysis laboratory derives from the need to provide technical support for the various figures involved in activities requiring the safe use of chemical and biological agents in lab analysis. The purpose of this work is to provide workers with more detailed information on the main possible causes of risk in an analysis laboratory, as well as on the most appropriate means of individual and collective protection to be used at work. The manual also gives an overview of main laboratory safety standards pertaining to clothing and equipment as well as procedures and lab design. This manual can be a valuable approach to knowledge of laboratory risks in order to eliminate or at least minimize them. Finally, the handbook can also be a support to the drafting of internal safety standards, both for general and specific procedures.

Phenomena and Theories in Corrosion Science, Methods of Prevention
Gergely Andras, Ph.D. (University of Twente, Faculty of Engineering Technology, Department of Applied Mechanics)

In series: Chemistry Research and Applications
Hardcover: 978-1-53615-252-4. $230.00.

This handbook is about the theory, phenomenon, and the most up-to-date research on corrosion science, written by accomplished, internationally revered scientists, and engineers in their fields. It features numerous illustrations, with experimental data based on original research, with figures that summarise the researchers’ achievements, examples, and case studies. The material originates from both international literature from leading research groups, and proprietary results from the authors. The text is
intended for college and university students working toward their B.Sc. and M.Sc. degrees, as well as those who plan to pursue further training or post-graduate study, and perform high-quality research. This compilation with seven chapters is perfect for those new to the study of corrosion science, as it will acquaint the reader with many basic and necessary terms. There are many examples of remarkable findings and recognised standard practices from engineers in the related industry. Three main topics are covered in this material: aluminium and titanium alloys, thin films and composite coatings, as well as microbially influenced corrosion. If anyone finds it difficult to differentiate the multiple phenomenon associated with corrosion studies, including understanding the general terms, or defining reasons for using specific investigation methods, then this publication will become a great resource. After reading this compilation, the reader will recognize many of the corrosion phenomenon present in both every day and professional life, including identifying their root-causes, proposing investigation methods to obtain further knowledge, and gaining the ability to identify measures to remediate integrity failures. The editor has worked in various fields of chemistry and has authored one of the most read and downloaded papers on the subjects of corrosion protection with graphene films and graphene based composite coatings, as well as zinc-rich paint coatings containing alumina-carrier based core-shell type nano-sized particles, combined with both physically modified or chemically functionalised multi-walled carbon nanotubes, which was based on his own research. The editor wishes all readers to have an instructive, useful, and enjoyable experience while reading these chapters.

Photocatalysis: Perspective, Mechanism, and Applications
Preeti Singh (Department of Chemistry, Faculty of Natural Sciences, Jamia Millia Islamia, Central University, New Delhi, India), Margub Abdullah, MD (Promising Centre for Sensors and Electronic Devices, Department of Physics, Faculty of Science and Arts, Najran University, Najran, India), Mudaris Ahmad (Department of Chemistry, Faculty of Natural Sciences, Jamia Millia Islamia, Central University, New Delhi, India) and Saiqa Ikram (Department of Chemistry, Faculty of Natural Sciences, Jamia Millia Islamia, Central University, New Delhi, India)
In series: Nanotechnology Science and Technology
Hardcover: 978-1-53616-044-4. $230.00.
This book covers all important topics of photocatalysis in simple language with clear presentation. Nanostructures are continuously improving the functional characteristics of the material because of enhanced surface to volume ratio. Therefore, in this book a concise and balanced account of all key aspects of nanostructures-based-photocatalysis, such as kinetics, mechanism, essential factors influencing the photocatalysis, as well as its recent developments, important applications, and future prospects has been presented systematically. In addition, historical background on each topic has also been provided along with the recent development to make it interesting to read.

Preferred Solvation and Hydration of Proteins in Water-Organic Mixtures: Two Sides of One Coin
Vladimir A. Sirotkin (A. M. Butlerov Institute of Chemistry, Kazan Federal University, Kazan, Russia)
In series: Chemistry Research and Applications
Softcover: 978-1-53616-020-8. $95.00.
e-book: 978-1-53616-021-5. $95.00.
This book describes the basic principles of a novel methodology to investigate the preferential hydration and solvation of proteins in ternary protein-water-organic solvent systems. Protein-water interactions are well-known to play a critical role in determining the function, structure, and stability of protein macromolecules. Elucidation of the processes occurring upon protein hydration in the presence of third component (organic solvents, salts, urea) is essential in a wide range of biophysical, biomedical, and biotechnological applications. In particular, there are many advantages in employing water-poor organic solvents, including the suppression of undesirable side reactions caused by water, the biocatalysis of reversed hydrolytic reactions (transesterification, peptide synthesis), or increased thermostability. Distinct intermediate protein states induced by organic solvents may be responsible for numerous neurodegenerative diseases (Alzheimer’s disease, Parkinson’s disease, and Huntington’s disease). However, the manner in which organic solvents increase/decrease the thermal stability, induce/reduce the extent of denaturation, and stabilize/desaturitize the partially folded conformations of proteins (amyloid fibrils and molten globules) is an intricate function of water content in organic liquids. Preferred hydration/solvation is an effective method for revealing the mechanism of the protein stabilization or denaturation. When a protein interacts with a binary water-organic solvent mixture, the three components do not equally mix. Water or organic solvent molecules exist preferentially in the protein’s solvation shell. This difference between the solvation shell and bulk solvent in the solvent components has been termed preferential solvation. Preferred solvation is a thermodynamic quantity that describes the protein surface occupancy by
Understand the water and cosolvent molecules. This is associated with the actual numbers of water/cosolvent molecules that are in contact with the protein’s surface. It was also found that the protein destabilization is directly associated with the preferential binding of the denaturant molecules to specific protein groups. The aim of our study is to monitor the preferential solvation and preferential hydration of the protein macromolecules at low, intermediate, and high water content in organic solvents at 25 oC. Our approach is based on the simultaneous measurements of the absolute values of the water and organic solvent sorption. The preferential solvation/hydration parameters were calculated using the water and organic solvent sorption values. The preferential solvation/hydration parameters were compared with the corresponding changes in the protein structure that transpire regarding the interaction of the protein with organic solvent and water molecules. The effect of organic solvent on the protein structure was investigated by FTIR (Fourier Transform Infrared) spectroscopy.

**Supercritical Carbon Dioxide**

*Yizhak Marcus*

In series: *Chemistry Research and Applications*


Softcover: 978-1-53615-165-7. $82.00.

e-book: 978-1-53615-166-4. $82.00.

The trend in recent years is to develop neoteric solvents to replace the traditional organic solvents that have been used in both laboratory practice and in the chemical industry as reaction media and agents for separation and extraction. The criteria employed are the requirements of the solvent to be ‘green’, i.e., friendly to the environment, and supercritical solvents have emerged as being able to fulfill this requirement. A recent book by the author, “Supercritical Water, a green solvent, properties and uses” responded to this trend. The most widely used supercritical fluid, however, is supercritical carbon dioxide (SCD), and while gaseous carbon dioxide is a hothouse gas that needs to be captured from flue gases and the atmosphere, the compacted form of SCD is a useful tool for chemistry. In order to use SCD intelligently, the properties of carbon dioxide as a chemical compound, and the bulk properties of supercritical carbon dioxide need to be known, and these are fully presented in the present monograph. Whereas SCD is a good solvent for a variety of solutes, it is inadequate for many others, mainly polar, and those capable of hydrogen bonding. To overcome this handicap, co-solvents are frequently added to SCD, and the properties of the resulting supercritical fluid mixtures are described in this book. Once either pure SCD or its mixture with a co-solvent have been produced, and the temperature and pressure have been suitably adjusted, the solvent power of this fluid is employed in a great variety of applications that are reviewed and discussed. In particular, the manner of adherence of such fluids to the requirements from ‘green’ solvents are assessed.

**Thermal Decomposition: Process and Effects**

*Kalyna Jocosa Pace*

In series: *Chemistry Research and Applications*


Hardcover: 978-1-53615-460-3. $195.00.

e-book: 978-1-53615-461-0. $195.00.

Azide compounds are high energy materials with applications in many chemical reactions and applications. In this compilation, several methods are applied to calculate the thermal decomposition properties of azide compounds comprising of differential scanning calorimetry, differential thermal analysis and thermogravimetric analysis which demonstrate temperature, energy and weight loss. Following this, the authors assess the catalytic efficacy of nanosized bimetallic transition metal oxides of copper, iron and cobalt, with iron synthesized using the solution combustion method in a laboratory reactor. The prepared catalysts are characterized for their structure and particle size. The authors also discuss thermal runaway in alkaline batteries. It is shown that a lot of experimental data exists that contradicts the generally accepted thermal runaway mechanism. In conclusion, a novel kinetic model for pyrolysis of medium-density fiberboard derived Beech sawdust is proposed. The complete procedure includes a combined four parallel reaction model and three-component Log-Normal distributed reactivity model.

**Understanding Halogenation**

*Vladimir T. Phelps*

In series: *Chemistry Research and Applications*

2019.

Softcover: 978-1-53615-947-9. $82.00.

e-book: 978-1-53616-342-1. $82.00.

Parkinson’s disease is the second most prevalent aging-related neurodegenerative disorder. Cell death in the substantia nigra, a motor region of the nervous system, is the key factor for the emergence of motor deficits in patients, although its critical role in Parkinson’s disease pathogenesis is put into question. Understanding Halogenation explores how halogenation stress could participate in neuronal damage of the nervous system and parkinsonian deficits. Following this, new insights into the C-F bonding nature of graphite fluoride with different fluoride concentrations C4F, C2F and C1F are presented. They are based on recent data from bulk techniques, which are very sensitive to the atomic local and electronic structure and C hybridization such as X-ray Raman Scattering and Pair Distribution Function analysis. Lastly, a novel bromine-containing Still–Gennari-type phosphonate reagent, methyl 2-(bis(2,2,2-trifluoroethoxy)phosphoryl)-2-
bromoacetate is designed, synthesized, and applied to the stereoselective construction of trisubstituted alkenes via bromomethylation of carbonyl groups.

Artificial Intelligence

**Advances in Artificial Intelligence Systems**

*V. Rajinikanth (Department of Electronics and Instrumentation Engg., St. Joseph’s College of Engineering, Chennai, India) and K. Kamalanand, PhD (Department of Instrumentation Engineering, MIT Campus, Anna University, Chennai, India)*

In series: *Computer Science, Technology and Applications*

Softcover: 978-1-53615-484-9, $82.00.
e-book: 978-1-53615-485-6, $82.00.

This book will help in fast decision making and solving complex real-world problems. Recent artificial intelligence approaches such as deep learning techniques and swarm intelligence algorithms have been proved to be useful in the development of intelligent systems in a variety of fields such as medical and biological systems, process control, etc. This book discusses few applications of computational intelligence algorithms such as social group optimization, convolutional neural networks, firefly algorithm and non-dominated sorting in genetic algorithms. The purpose of this book is to bring multidisciplinary researchers together to discuss state-of-art applications of artificial intelligence.

**Artificial Intelligence Engineering for Postsecondary Education Digital Transformation**

*Jesus Alfonso Perez Gama IEEE Life Senior – Education Society Colombia Chapter Chair, IASA, IAOE, IIOA, NY Academy Sciences, INCOSE, ACIS, ACCIO*

In series: *Computer Science, Technology and Applications*

2020.
Softcover: 978-1-53616-390-2, $95.00.
e-book: 978-1-53616-391-9, $95.00.

We present conceptual foundations for artificial intelligence, expert systems, and knowledge engineering and management and discuss high quality in education. Following, we discuss the basics of our vision and prospective about higher education (HE): the battle for the future with digital transformation (DT). Next, we present our central Chapter 4 on DT: our dual model of knowledge and data, as befits a HE institution. Below, we present a succinct outline of our architectural model. The pillars of the architecture are funding, research, entrepreneurship and social projection (Chapter 8); recognizing from the start that knowledge has its ethos in the university; these pillars correspond to: • Productive ecosystem of the DT • DT that enhances knowledge and innovation in the universities for the habilitation of the digital capabilities • A new economy that requires the U transformation as social projection. • New DT human talent required by the new knowledge and intelligence industry. The student hyper-personalization by competences and skills is required. Ten Views of Our DT Model, given its complex process that takes place in long ways, a process required for the successful survival of an organization into the IV Industrial Revolution, with the final purpose of being very competitive, productive and of high quality (HQ). The DT views, namely: 1- The DT Ecosystem. 2- The structural vision or the pillars of the DT mentioned. 3- The DT strategic map, showing scenarios, actors and vision-mission. 4- The architectural components for DT: 8 architectures were developed and implemented, applying some intelligent constructs that we have developed and documented in the last 10 years at FESSANJOSE (U. San José), leading DT in postsecondary education (PSED). 5- Digital 360° architecture of DT Academy and Administration LOCUS: this architecture is the digital portfolio that implies the organization of the subsystems to obtain better and/or new functionalities based on knowledge to obtain an intelligent behavior. The DT multilayer-architecture approach is a system of systems (SoS) one, which ensures compliance with government policies, norms and standards, in a highly complex social institution with digital assets; this approach describes...
the subsystems at a higher level, where a system is composed, and with the protocols by which the subsystems communicate. It provides a 360° business vision map and a planning framework for commercial and technological changes. 6- The computational-mathematical perspective of DT, identifying endogenous and exogenous variables and their interrelations. 7- The synthesis, the Matrix of End-Means (EMM) that summarizes in DT: Where the HE is. In addition, where can the HE go? 8- The MIR Matrix, which describes DT Objectives, impacts-indicators and results. 9- The dynamic model of the DT system, based on computational intelligence, representing the system information control of all the components to achieve the completion of the DT. The intelligent management information system (iMIS) for PSEd, shows the dynamics of DT, integrating several multilevel system hybrid architectures, as a space to respond to the solution of the HE problems, tending to the desired competitiveness, specifically pointing out the way that these modern technologies can be included for their adaptation and evolution in PSEd in post-modernity, making governability, and teaching and student productivity compatible with educational high quality, the purpose of DT. The interface Results of the iMIS includes: high quality metrics, digitization rate progress, indicators (an special appendix on KPI were included) and values of management, desertion, answers, and plans. The Input Interface includes data, information and knowledge acquisition, where the attributes, parameters.

## Computer Science

### Advanced Security Issues of IoT Based 5G Plus Wireless Communication for Industry 4.0

**Vijey Thayananthan, Ph.D. (Department of Computer Science, Faculty of Computing and Information Technology, King Abdulaziz University, Jeddah, Saudi Arabia)**

In series: *Computer Science, Technology and Applications*


Advanced IoT based wireless communication has recently received a lot of attention due to a wide range of industry 4.0 applications such as security solutions of CPS in vehicular communication, E_Healthcare over secure wireless communication, privacy issues of E_Learning via cost and energy efficient wireless network communication, etc. In these applications, physical data is continuously monitored by the IoT-based sensor nodes to facilitate the current situations, 5G network management, security solutions, etc, in industry 4.0 environment. Despite the many security issues considered in existing wireless communication in the industry 4.0 applications, IoT based 5G and 5G+ wireless communication will enhance the future security issues including cybersecurity solutions. The aim of this book to deliver the best services with minimum cost and maximum security in all industry 4.0 applications. For instance, medical priority services against the available sources and devices (IoT, sensors, decision-making units, etc.), patient monitoring services against the waiting list and the population, and security services of CPS against the energy efficiency and the battery lifetime are challenging critical problems in the industry 4.0. This book covers some improvement methods in security influence to future communication they are cybersecurity issues of IoT based 5G and 5G+ communication systems. These methods can be considered through the efficient channel coding scheme, efficient traffic management, bandwidth guard, cybersecurity solutions, etc.

Requirements for future communication such 5G+ support to illustrate the security issues in selected applications of industry 4.0 such as learning style transformation. Sensors are typically capable of wireless communication and are significantly utilized in many applications such as medical communication with IoT-based 5G infrastructure. Despite many security solutions of communication technologies, decision making, dynamic and intelligent solutions based on sensors, IoT devices, CPS, etc, will be minimizing energy costs and maximizing security issues of industry 4.0. The field of advanced IoT-based 5G+ wireless communication networks merge a lot of functions like secure transmission capacities with latest multiple access schemes, computation of best latency and energy efficiency, and secure communication with location-based services, etc. This book covers many functionalities through the important examples and applications used in industry 4.0.

### An Insight to Computers

**S. Anandamurugan, Ph.D**

In series: *Computer Science, Technology and Applications*


Softcover: 978-1-53614-985-2. $95.00.


This book is intended for use by new students taking courses related to computers. The book is structured as an introductory book, but it is designed to be accessible to a wide audience. This book uses a simple approach for better understanding via the help of diagrams. This book can be used as an introductory text to computers by advanced undergraduate or graduate students in computer science or related disciplines such as computer engineering, computer technology and information technology.
Blockchain Technology and Applications
Jan Veuger (School of Finance and Accounting, School of Creative Technology and School of Governance, Law and Urban Development of the Saxion University of Applied Sciences Enschede, The Netherlands)
This book provides an overview of the latest developments on Blockchain technology and its applications. The internet has already made it possible to transfer information quickly and cheaply, without involving intermediaries, while Blockchain gives the same benefits for transferring value. The Internet is used to transfer words and images, while Blockchain is used for transactions. Essentially, Blockchain is a combination of two elements: a shared and distributed ledger with synchronized data spread over multiple sites, countries, and / or institutions, and a cryptography – a digital token with a monetary value. This technology could have a huge impact on the value chain in our society. This impact includes efficiency, transparency, ownership, value (transfer), automation, and service provision. To understand the world of blockchain, we need to understand the innovation of the currency Bitcoin in 2009, that was built on Blockchain technology. Bitcoin is a combination of four individual elements: (1) cryptography, (2) a peer-to-peer network, (3) an open source protocol and (4) a shared ledger. This makes it a phenomenon that people have been enthusiastic about. This book is comprised of chapters written by experts on Blockchain from Austria, Brazil, China, Croatia, Georgia, Germany, Italy, Netherlands, Slovenia, Spain, and Switzerland, on the following topics: (1) Blockchain and the Agenda 2030 by Danielle Mendes Thame Denny, (2) Application of Blockchain Technology in the Field of E-Government Services by Jiarui Zhang, (3) Can the Cybersecurity of Smart Buildings be Improved Using Blockchain Technology? by Ben van Lier, (4) Influence of Blockchain Applications and Digitalization on Real Estate by Jan Veuger, (5) Blockchain: Technology Looking For a Problem in Real Estate? by Jo Bronckers and Jan Veuger et al., (6) Real Estate Start-up Get a Brick by Wendel Hulsebos and Jan Veuger, (7) Blockchain: An Efficiency Solution For Housing Associations? by Michel Vonk, (8) Blockchain Applications in Support of the Energy Transition by Mieke Oostra and Jelle Rijma, and (9) Many Keys of Blockchain for Real Estate by Esther Dekker. Many questions remain about Blockchain, including whether to continue looking at existing markets for applications of the technology, or at disruptive and innovative newcomers. Is Blockchain only a technological disruption or a real game changer? Will the entire value chain of the market embrace it? Confidence in Blockchain is certainly a precondition for guiding disruption where (new) companies use new technology to offer cheaper and superior alternatives in the market. However, the big question is, how quickly will Blockchain develop as well as all its applications? Stephen Hawking wrote in his book Brief Answers to the Big Questions about how we will shape the future (Hawking, 2018: p207): “In the same way that the internet, our mobile phones, medical imaging, satellite navigation, and social imagings would have been incomprehensible to the society of only a few generations ago, our future world is beginning to be conceived. Information on its own will not take us there, but the intelligent and creative use of it will.”

Computer Science Advances: Research and Applications
Sandip A. Kale (Associate Professor, Mechanical Engineering Department, Trinity College of Engineering and Research, Pune, India)
Hardcover: 978-1-53614-844-2. $160.00.
This book is comprised of eleven chapters about computer application and research areas to discuss the latest issues and technologies. Interesting and important topics like fuzzy and cognitive applications, fuzzy classifiers, neural network, data analytics, clustering and classification models, artificial intelligence, controller area network, digital technology industry 4.0, etc. are included in this book. The first chapter presents neuro-fuzzy and cognitive researches for the development of objects on the basis of location and territory. The second chapter is about the method of parametric identification using a neuro-fuzzy classifier. The third chapter describes the research on the internet of things enabled smart campus for efectual data transit from one entity to another for classroom notes. Chapters Four and Five are dedicated to the use of advanced computer science of the medical applications. Chapter Six presents the detection and estimation of obstacle position for imminent crash prediction to enhance the driver and vehicle interface using the controller area network. Chapter Seven presents the development of accurate models for estimation of pure CO2-oil minimum miscibility pressure based on artificial intelligence methods. Chapter Eight addresses dynamic, massive data handling with swarm intelligence based algorithms for finding the solution of a difficult problem. The next chapter proposes an encryption model which focuses on bit-level confusion and bit-level diffusion followed by block-level diffusion by using 1-D chaotic maps. Chapter Ten is dedicated to digital technologies of the industry 4.0. The last chapter compares the pattern sequence based forecasting method with ARIMA in univariate time series forecasting.
Human-Computer Interaction

Turgut Ozseven (Department of Computer Engineering, Tokat Gaziosmanpasa University, Tokat, Turkey)

In series: Computer Science, Technology and Applications

2020.
Hardcover: 978-1-53616-495-4. $160.00.

Human Computer Interaction is used in all areas of our daily lives as a result of the rapid development of technology and computer systems. Human Computer Interaction is an interdisciplinary field of study involving the design and implementation of interactive technologies. The field of Human Computer Interaction is related to many areas such as human behavior, psychology, cognitive sciences, computer technologies, software engineering, ergonomics, graphic / industrial design, sociology and educational sciences. Researchers of this subject both observe the interaction of people with computers and design different technologies and examine the interaction of people with these technologies. The Human Computer Interaction system has four main components: user, task, tool, context. Human Computer Interaction aims to develop interactive technologies through design, evaluation and implementation processes. The development of interactive technologies depends on usability. Usability can be determined by evaluating effectiveness, efficiency and satisfaction together. Effectiveness includes how much users can accomplish the tasks they are expected to do using the application; efficiency, how long the user has done the job; Satisfaction refers to the measure of the user’s ideas when using the application. One of the major shortcomings in HCI is the transformation of theoretical knowledge into practice. The purpose of the book is to introduce students, teachers, researchers, and practitioners to new advances in HCI. The book includes theoretical and practical studies prepared with the academic contributions of scientists working in different fields. It was decided to publish each chapter in the book after being examined by the scientific board. As an editor, my duty is to ensure breadth, while the chapter authors treat the delegated chapters with depth. The book is designed for practitioners or researchers of all levels of expertise from novice to expert. Each of the book’s individual topics could be considered as a compact, self-contained mini-book right under its title. The approach is to provide a framework and a set of techniques for evaluating and improving HCI. It presents a specific set of solutions, mostly obtained from real world projects and experimental studies, for routine applications. It further highlights promising emerging techniques for research and exploration opportunities. The development team of this book wanted to thank their colleagues who made contributions to this book by providing continuous encouragements and thorough reviews of the chapters of the book.

Quantum Image Watermarking

Ri-Gui Zhou, Gaofeng Luo, and Wenwen Hu (Shanghai Maritime University, Shanghai, China)

In series: Computer Science, Technology and Applications

2019.
Hardcover: 978-1-53616-099-4. $195.00.
e-book: 978-1-53616-183-0. $195.00.

This book offers various schemes related to watermarking techniques for quantum images in spatial and frequency domains. The book includes 7 chapters. Chapter 1 is an introductory part, which describes the research background, the significance of topics, literature review and research methods. Chapter 2 is the basis of knowledge, which provides the techniques of the field of quantum computation, such as quantum bit, quantum gate, and quantum circuit. Chapters 3, 4, 5, 6, 7 are on various quantum watermarking schemes. We present new quantum watermarking algorithms for binary images, grayscale and color images. These chapters describe the design of quantum watermarking schemes and their corresponding quantum circuits. In addition, the simulated experimental results and analysis demonstrate the superiority of the proposed schemes in this book.

Information Technologies

Information Security: Cyberattacks, Data Breaches and Security Controls

Paul Scholz

In series: Privacy and Identity Protection


Federal agencies and our nation’s critical infrastructures, such as communications and financial services, are dependent on information technology systems and electronic data to carry out operations and to process, maintain, and report essential information. Yet, cyber-based intrusions and attacks on federal and nonfederal systems have become not only more numerous and diverse, but also more damaging and disruptive as discussed in chapter 1. The IRS has a demanding responsibility to collect taxes, process tax returns, and enforce the nation’s tax laws. It relies extensively on computerized systems to support its financial and mission-related operations and on information security controls to protect the sensitive financial and taxpayer information that reside on those systems. As part of its audit of IRS’s fiscal year 2017 and 2016 financial statements, GAO assessed whether controls over financial and tax processing systems were effective in ensuring
the confidentiality, integrity, and availability of financial and sensitive taxpayer information as reported in chapter 2. Reliance on a global supply chain introduces multiple risks to federal information systems. Chapter 3 highlights information security risks associated with the supply chains used by federal agencies to procure IT systems. The Office of Personnel Management (OPM) collects and maintains personal data on millions of individuals, including data related to security clearance investigations. In June 2015, OPM reported that an intrusion into its systems had affected the personnel records of about 4.2 million current and former federal employees. Then, in July 2015, the agency reported that a separate but related incident had compromised its systems and the files related to background investigations for 21.5 million individuals. From February 2015 through August 2017, multiple reviews of OPM’s information security were conducted. Four reports based on these reviews were issued. The reports contained 80 recommendations for improving the agency’s security posture. Chapter 4 reviews relevant documents and artifacts reflecting OPM’s actions and progress toward implementing the 80 recommendations contained in the four reports, and assessed the actions against the intent of the recommendations. CDC is responsible for detecting and responding to emerging health threats and controlling dangerous substances. In carrying out its mission, CDC relies on information technology systems to receive, process, and maintain sensitive data. Accordingly, effective information security controls are essential to ensure that the agency’s systems and information are protected from misuse and modification. Chapter 5 reviews the extent to which CDC has taken corrective actions to address the previously identified security program and technical control deficiencies and related recommendations for improvement. Federal agencies are dependent on information systems to carry out operations. The risks to these systems are increasing as security threats evolve and become more sophisticated. To reduce the risk of a successful cyberattack, agencies can deploy intrusion detection and prevention capabilities on their networks and systems. Chapter 6 determined the reported effectiveness of agencies’ implementation of the government’s approach and strategy; the extent to which DHS and OMB have taken steps to facilitate the use of intrusion detection and prevention capabilities to secure federal systems; and the extent to which agencies reported implementing capabilities to detect and prevent intrusions. Recent large-scale data breaches of public and private entities have put hundreds of millions of people at risk of identity theft or other harm. Chapter 7 reviews issues related to consumers’ options to address risks of harm from data breaches and examines information and expert views on the effectiveness of consumer options to address data breach risks. While Chapter 8 considers the answer to this question: what legal obligations do Internet companies have to prevent and respond to data breaches? Then discusses several factors Congress might consider when weighing future legislation.

Networking

**Twitter: Global Perspectives, Uses and Research Techniques**

_Innocent Chiluwa (Department of Languages & General Studies, Covenant University, OTA, Nigeria) and Gwen Bouvier (Maynooth University, Maynooth, Co. Kildare, Ireland)_

In series: _Media and Communications - Technologies, Policies and Challenges_


Social media have formed part and parcel of our everyday life. Defined by many as “a public sphere,” Twitter has indeed enabled social and political conversations, empowering diverse voices from networked societies that hold government accountable and encourage activities that promises several benefits in business, politics, education, health, and commerce among others. This collection of essays takes a difference approach to describing the functions and roles of Twitter in almost all human affairs. In examining the various ideas and opinions about Twitter and its diverse and complex userbase, this volume not only describes the uses and perspectives but also introduces cutting-edge scientific research techniques for studying Twitter. The uses of Twitter in some professional and academic disciplines such as journalism, teaching and learning, creative writing, campaigning, sports, and business are carefully explained. This volume’s international authorship includes experts, professionals, and emerging scholars from many various disciplines, and they apply different methods and approaches to studying Twitter as a strong and vibrant platform of social media. This book will be very helpful as a handbook to students, scholars, and professionals in communication, journalism, education, politics, linguistics, and social media studies.
Vehicular Networks: Applications, Performance Analysis and Challenges
Peter Chong (Head of Department of Electrical and Electronic Engineering, Auckland University of Technology, New Zealand) and Ivan Ho (Hong Kong Polytechnic University, Hong Kong)
In series: Computer Science, Technology and Applications
2019.
e-book: 978-1-53615-979-0. $230.00.
With the forthcoming enforcement of installing wireless units for Dedicated Short Range Communications (DSRC) on newly manufactured light-duty vehicles in the US, the development of the Cellular V2X (C-V2X) standard in 3GPP, and the growing interest in connected autonomous vehicles, vehicle-to-everything (V2X) communications and vehicular networking for improving road safety, enhancing traffic efficiency, and supporting heterogeneous vehicular applications for smart mobility is foreseeable in the near future. This book provides an overview of vehicular networks on the performance analysis, potential applications, and existing challenges. It covers the fundamental methodology for modeling the vehicular traffic and the performance of vehicular communication protocols, as well as the challenges and cutting-edge solutions for vehicular positioning in urban canyon and big data mining for traffic flow prediction and various vehicular applications. The concept of mobile edge computing (MEC) in vehicular networks is also introduced and discussed for better resource management and network utilization. Finally, how to preserve privacy and system security while not disrupting the normal operation of vehicular networks is a pivotal challenge to overcome. This book is suitable for researchers and professionals in the area of vehicular networking and intelligent transportation systems. College engineering postgraduate students who aspire for an in-depth study and understanding of the upcoming trend in vehicular networks and related technologies will also find this book of interest.

Digital Technology

Digital Technology: Advances in Research and Applications
Michelle F. Wright, PhD (Department of Psychology, Pennsylvania State University, University Park, PA, USA)
In series: Computer Science, Technology and Applications
2020.
Hardcover: 978-1-53616-438-1. $195.00.
The book provides up-to-date research on the role of digital technologies in children’s, adolescent’s, and young adult’s lives, and how they navigate developmental tasks and issues utilizing these technologies. The book synthesizes the research on digital technology use and how these technologies contribute to addiction, information processing for fake news, hinder or help identity development and formation, contribute to aggressive behaviors, explore sexuality, and benefit or harm relationships with parents, teachers, friends, and romantic partners. Topics include cyberbullying and prevention, cyberbystanding, internet and social media addiction, suicide, fake news, proanorexia, and identity.

New Studies on Video Games and Health
Anthony S. Thomas
In series: Electronics and Telecommunications Research
Softcover: 978-1-53615-567-9. $82.00.
e-book: 978-1-53615-568-6. $82.00.
In New Studies on Video Games and Health, the first chapter analyzes investigations on the use of virtual reality in the context of learning and rehabilitation. The second chapter compares video game players and non-video game players across a range of measures of competitiveness to understand the differences and similarities between these groups’ context general competitive profiles. The objective of the closing chapter is to identify and analyze how the techno scientific processes of corporeal virtualization, linked to video games, have interfered in the constitution of the bodies and what implications are involved in the body culture of movement and Physical Education.
## Special Topics

### Big Data and Cloud: Trust, Security and Privacy

**Abdulrahman Yarali (Professor of Telecommunication, Murray State University, Murray, KY, US) and Michael Lee Ramage (Director, Center for Computer and Information Technology, Murray State University, Murray, Kentucky, US)**

In series: *Internet Theory, Technology and Applications*

2019.


The emergence of big data is expected to change business dynamics in different organizations and the value behind big data is evident. Consumer data is traded, sold, and a sought-after commodity. In the next two decades, the volume of data available to different enterprises will grow dramatically. The big data is expected to change insights about the customers, operational costs, and all the relevant aspects of different business models around the world. The emergence of cloud computing has enabled businesses to compete at a higher level because the traditional software and systems are no longer required. Digital heterogeneity and the confluence of Artificial Intelligence with 5G and IoT are expected to dominate the market because the majority of the organizations in the world are considering the use of AI to reduce their operating costs. Even as the future of business technology continues to get brighter, there is a need to reconsider trust, privacy, and risk management issues. As technology continues to advance, the risks become greater, and thus, security becomes a significant aspect that needs to be addressed. In the last few years, new laws have been developed to regulate how service providers collect, use, retain, disclose, and dispose of user information. The number of cyber-attacks and data breaches have been rising at an alarming rate and it is essential for the organization to take necessary precautions to protect their data. In this book, transformation and advancement to a pervasive and converged digital infrastructure of Big Data, IoT and AI with their values, threats and security at different levels are discussed.

### Broadband: Deployment, Access and the Digital Divide

**Orlando Harrison**

In series: *Internet Theory, Technology and Applications*

2019.

Hardcover: 978-1-53616-409-1. $230.00.


Broadband—whether delivered via fiber, cable modem, mobile or fixed wireless, copper wire, or satellite—is increasingly the technology underlying telecommunications services such as voice, video, and data. Chapter 1 focuses on the gaps specifically related to broadband availability and adoption. How broadband is defined and characterized in statute and in regulation can have a significant impact on federal broadband policies and how federal resources are allocated to promote broadband deployment in unserved and underserved areas as discussed in chapter 2. The move to place restrictions on the owners of the networks that comprise and provide access to the internet, to ensure equal access and nondiscriminatory treatment, is referred to as “net neutrality.” While there is no single accepted definition of net neutrality most agree that any such definition should include the general principles that owners of the networks that comprise and provide access to the internet should not control how consumers lawfully use that network; and should not be able to discriminate against content provider access to that network as reported in chapters 3 and 4. The “digital divide” is a term that has been used to characterize a gap between “information haves and have-nots,” or in other words, between those Americans who use or have access to telecommunications and information technologies and those who do not. Chapter 5 focuses on the one important subset of the digital divide debate which concerns high-speed internet access and advanced telecommunications services, also known as broadband. While there are many examples of rural communities with state-of-the-art telecommunications facilities, recent surveys and studies have indicated that, in general, rural areas tend to lag behind urban and suburban areas in broadband deployment. The Rural Utilities Service (RUS) at the U.S. Department of Agriculture (USDA) houses three ongoing assistance programs exclusively created and dedicated to financing broadband deployment: the Rural Broadband Access Loan and Loan Guarantee Program, the Community Connect Grant Program, and the ReConnect Program. Chapter 6 discusses each of these programs. Tribal lands are generally in remote and rugged areas and broadband access can help residents develop online businesses, access telemedicine services, and use online educational tools. However, residents of tribal lands have lower levels of broadband access than residents of non-tribal lands. Chapters 7 through 11 report on the status of broadband on tribal lands.
How Information Creates its Observer: The Emergence of the Information Observer with Regularities
Vladimir S. Lerner (Marina Del Rey, CA, USA)
In series: Computer Science, Technology and Applications
Observers are everywhere, from communicating people, animals, and different species, to any interacting subjects that accept, transform, and exchange information. Up to now, common information regularities, emergence, differentiation, and appearance have not been studied through a united approach. This book presents a new method for understanding the notion of information and its Observers, showing how information creates Observers and generates regularities during observation. The approach is developed from Wheeler’s concept in physics, “It from Bit,” which has been modified in this text to “Observer-Participator Bit.” Studying information comes from probabilistic observations, emerging space-time microprocess, entanglement, qubit, encoding bits, and evolving macroprocess, leading to the creation of the Observer, as well as a geometric information structure. The regularities observed self-organize into information processes that encode information causality, logic, and complexity, and determine the observer’s cognition, evolving toward intelligence. The regularities create a double spiral rotating coding structure, which observation self-generates. For the first time, this book establishes the observer’s united information mechanism, with self-operating integral logic, transforming an observed uncertainty into physical reality. The book also includes information formalism, which has been applied to solutions for a wide range of computer science and engineering problems implemented in practice.

Earth Sciences

Geography

A Description of Greenland
Hans Egede
In series: Arctic Region and Antarctica Issues and Research
Softcover: 978-1-53615-077-3. $95.00.
e-book: 978-1-53615-078-0. $95.00.
Hans Egede was a Lutheran missionary who launched mission efforts to Greenland. He embarked for Greenland, with his wife and four small children, the 12th of May, 1721; and he landed in Ball’s River, the 3d of July. He established a successful mission among the Inuit and is credited with revitalizing the island.

Wonders of the Yellowstone
James Richardson
In series: American History, Culture and Literature
Softcover: 978-1-53615-079-7. $95.00.
The first earnest attempt to explore the valley of the upper Yellowstone was made in 1859, by Colonel Raynolds, of the Corps of Engineers. His expedition passed entirely around the Yellowstone basin, but could not penetrate it. Ten years after Colonel Raynolds’s unsuccessful attempt to solve the problem of the Yellowstone, a small party under Messrs. Cook and Folsom ascended the river to the lake, and crossed over the divide into the Geyser Basin of the Madison. The general public were indebted for their first knowledge of the marvels of this region to an expedition organized in the summer of 1870 by some of the officials and leading citizens of Montana. In the meantime, a large and thoroughly-organized scientific party, under Dr. F. V. Hayden, U. S. geologist, were making a systematic survey of the region traversed by Colonel Barlow. It is safe to say that no exploring expedition ever had a more interesting field of investigation, or ever studied so many grand, curious and wonderful aspects of nature in so short a time.
**Geology**

**Encyclopedia of Geology (12 Volume Set)**  
*Enrique Walker and Darrell Gomez*  
In series: *Geology and Mineralogy Research Developments*  
2019.  
Hardcover: 978-1-53615-503-7. $1650.00.  
The Encyclopedia of Geology organizes researchers from around the world in geology and related disciplines and maintains an up-to-date reference work for readers worldwide.

**Land Degradation: The Main Challenge**  
*Iaria Zambon, PhD (Department of Agricultural and Forestry sciences (D.A.F.N.E.), Tuscia University, Viterbo, Italy; University of Tuscia, Italy), Luca Salvati (Council of Agricultural Research and Economics (CREA), Research Centre for Forestry and Wood, Viale, Arezzo, Italy) and Carlotta Ferrara (Council of Agricultural Research and Economics (CREA), Italy)*  
In series: *Climate Change and its Causes, Effects and Prediction*  
Softcover: 978-1-53615-575-4. $82.00.  
e-book: 978-1-53615-576-1. $82.00.  
Desertification is one of the most important issues facing our societies because of its serious consequences for human health, landscape and the environment. Nonetheless, the issue has been in the eyes of media, decision makers and public opinion and it should be noted that this interest tends to be cyclical, corresponding to peaks that reflect the outbreak of emergency situations related to prolonged episodes of drought and water scarcity, in turn associated with climate changes. This volatile interest has focused on the relationship between desertification and climate change (and more generally on the biophysical factors underlying desertification), neglecting the important role played by social, economic, cultural, political and institutional factors. This role — brought to the fore by the most recent socioeconomic dynamics at various spatial scales — requires dedicated approaches from the scientific point of view and a less sensationalistic dissemination of research evidence. This book proposes a trans-disciplinary vision on issues of desertification and land degradation, focusing on long-term socio-ecological dynamics as an interpretative key to local systems’ complexity.

**Pacific Ocean Mega Ecotone of Northern Eurasia: An Evolutionary Model of a Continental Biosphere**  
*Erland G. Kolomyts (Institute of Ecology of the Volga River Basin, Russian Academy of Sciences, Moscow, Russia)*  
In series: *Earth Sciences in the 21st Century*  
2020.  
Hardcover: 978-1-53616-493-0. $310.00.  
A comprehensive evolutionary landscape-evolutionary concept of organization of terrestrial geo(eco)-systems in the Pacific Ocean Mobile Belt — the tectonically and climatically active ocean-continent interface as a focus of evolutionary ecological and geographical processes and phenomena at the modern stage of development of the biosphere has been set forth. The empirical statistical modeling of forest natural complexes has been performed using the materials of large-scale landscape-ecological surveys performed at experimental sites on the Pacific Ocean mega ecotone of Northern Eurasia. The theses put forward on the basis of evolutionary land-scape studies have been substantiated. The three spatial-temporal sections with a common trajectory of subaerial landscape-genesis have been described: (1) neo-pacific progressive – the origin and evolution of island-arc geo(eco)systems of the Neogene/Quaternary period in the oceanic environment; (2) sub-pacific marginal-continental – the subsequent ascending development of the continent as a young (Mesozoic) mountain-valley morphostructure; and (3) sub-pacific regressive – the final study of damped evolution on the continental islands with “senile” erosion-denudation relief. The climatogenic mechanisms of evolutionary processes in different sectors of Pacific Ocean mega ecotone are described.
Tribology in Geology and Archaeology
Robert G. Bednarik (Convener, President and Editor, International Federation of Rock Art Organisations (IFRAO), Australia)
In series: Earth Sciences in the 21st Century

Tribology, the science of interacting surfaces in relative motion, has traditionally focused on technological applications, although some attention has been given to geotribology and tribochemistry. This volume explores the geological applications of tribology in some detail, before introducing the entirely new subdisciplines of archaeotribology and the tribology of rock art. The various geological, archaeological, and rock art applications are then correlated through the detailed description of a tribological phenomenon of the natural world that was only discovered most recently, kinetic energy metamorphosis (KEM). This newly described phenomenon was first observed as a by-product of rock art production, but it was subsequently recognized as a widespread physical process whose effects are much more common in both geology and archaeology. Not only does this book illuminate the holistic and thus inter-disciplinary character of natural processes, it also presents the need to view tribology as a science connected to many other fields. Therefore, this volume advocates an extended scope for a science traditionally focused on aspects of friction, wear, and lubrication of machines. This enhances the importance of tribology, while at the same time enriching disciplines that have never even been considered to have potential connections with tribology. The book therefore succeeds in demonstrating that, ultimately, all disciplines are interconnected in the magnificent web of science, in which all fields of scientific enquiry must play a role. This book thus presents a strong statement on the need for integrative understanding, but at the same time it demands high standards of epistemology.

Geophysics

Recent Advances in Geophysics
Christina N. Brandt
In series: Geology and Mineralogy Research Developments
Softcover: 978-1-53616-207-3. $82.00.
e-book: 978-1-53616-208-0. $82.00.

In the opening chapter of this compilation, the authors process and geologically interpretate the marine geological mapping of a detailed grid of very high resolution seismic profiles recorded in the Campania continental shelf between the Solofrone river mouth and Agnone. Following this, an integrated analysis of the volcanic structures located in the subsurface of Naples and the Gulf of Gaeta is presented based on the geologic interpretation of seismic profiles. The goal of this study is to advance the seismo-stratigraphic knowledge concerning volcanic structures occurring in this sector of the Tyrrhenian offshore. In the closing study, geochemical and tomography techniques were applied to agricultural area near the coastline of Spain with the following objectives: determining the spatial and vertical distribution of nutrients and soluble salts in the agricultural area; identifying the different layers of soil and subsoil; and evaluating the relationships between the identified layers and leaching of salts and nutrients.
Hydrology

An Evaluation of Groundwater Storage Potentials in a Semiarid Climate
Gabriel Ike Obiefuna, Ph.D. (Department of Geology, Modibbo Adama University of Technology, Yola, Nigeria) and Saeid Eslamian, Ph.D. (Department of Water Engineering, Isfahan University of Technology, Isfahan, Iran)

In series: Earth Sciences in the 21st Century
Softcover: 978-1-53614-900-5. $95.00.
e-book: 978-1-53614-901-2. $95.00.

This book focuses on evaluating the groundwater storage potentials of a semiarid environment of northeastern Nigeria. The book uses the proven and well established methods and approaches in identifying aquifer types and calculating aquifer parameters, simulating groundwater flow net and transport. We also employ the measured and estimated water budget parameters in evaluating groundwater storage potentials of a hitherto virgin area of Nigeria. We have featured more than 24 figures, diagrams and illustrations to highlight the major themes, that are important in the retention of key concepts. This book presents a holistic approach to advances in groundwater hydrology from recent developments in reservoirs and hydraulics and analytic modeling of transient multi-layer flow. This book therefore integrates the real life data and gives the examples of processes that make the content practical and implementable. These are the examples of developments in groundwater hydrology that underscored perspectives regarding the challenges faced by industry, professionals, researchers and academia.

Managing Stormwater: Practices and Challenges for Reuse and Recycling
A.H.M. Faisal Anwar, Ph.D. (Associate Professor (Water & Environmental Engineering), Department of Civil Engineering, School of Civil and Mechanical Engineering, Curtin University, Perth WA 6845, Australia)

In series: Environmental Science, Engineering and Technology
Hardcover: 978-1-53615-250-0. $230.00.

Current freshwater availability is reducing because of climate change, rapid urbanization, and an increase in population. Due to these situations, the identification of alternative water resources has become a main focus of research worldwide. Among all alternatives, stormwater has been found as most promising for reuse and recycling. The rapid development of urban and suburban areas has limited the natural infiltration of storm water because of increased impermeable areas, which in turn, increase the risk of urban and suburban flooding. Urban and suburban stormwater runoff carries a significant amount of pollutants, such as heavy metals, hydrocarbons, pesticides, and bacteria. The sources of pollutants and their contribution to urban stormwater runoff are highly dependent on the land use pattern. These pollutants are harmful to the environment and a threat to human health at higher concentrations. In order to maintain healthy waterways, it is necessary to develop sustainable management of stormwater. Stormwater management practices involve many challenges for its reuse and recycling, which are the main focus areas of this book. Available management practices consist of collecting and discharging the stormwater into rivers, ponds, or nearby retention basins. The best management practices (BMPs) may include oil and grit separators, grassed swales, vegetated filter strips, biofiltration/bioretention ponds, constructed wetlands, gross pollutant traps, and catch basin inserts. This book has eleven chapters that describe the practices and challenges of different BMPs for stormwater management. These include combined sewer networks, different rainwater harvesting techniques, constructed wetlands, MUSIC modelling of bioretention systems, catch basin inserts, permeable pavements, the use of adsorbents for cleaning stormwater, low impact developments, and membrane-based technologies for stormwater treatment.
Mineralogy

**Fluorite: Structure, Chemistry and Applications**  
*Moritz van Asten*  
In series: *Geology and Mineralogy Research Developments*  
Softcover: 978-1-53615-204-3. $95.00.  
e-book: 978-1-53615-205-0. $95.00.  
Great importance has been placed on the development of new technologies for the synthesis of nanoparticles and nanostructured materials, which are profitable for industrial production and environmentally safe. As such, in Fluorite: Structure, Chemistry and Applications, crystal structure of fluorites, point defects, specific properties, innovative methods of nanopowders synthesis and properties of ceria-based materials are discussed. Next, the dispersion and attenuation of ultrasonic bulk modes in cubic crystals is described in the framework of a phenomenological approach, whereas the contribution of the subsystem of Jahn-Teller complexes is presented through microscopic theory and Jahn-Teller effect problems. Lastly, the authors review the substitution strategies that have been attempted to introduce mixed conductivity into fluorite zirconia materials, the solubility of such transition metal dopants and the resultant electrical properties. Potential mixed conducting ternary systems are discussed.

Special Topics

**Horizons in Earth Science Research. Volume 19**  
*Benjamin Veress and Jozsi Szigethy*  
In series: *Horizons in Earth Science Research*  
Hardcover: 978-1-53615-826-7. $250.00.  
The opening chapter of Horizons in Earth Science Research. Volume 19 uses obtained kinetic data to estimate the growth rate of the basic copper carbonates with the participation of complexing agents, thus demonstrating that natural organic complexing agents can play an important role in the formation of copper carbonate minerals. The next section deals with how the presence of organic matter, which is much softer than the inorganic matrix, affects gas production in shale reservoirs. A comprehensive study of the characteristics of organic matter can improve our understanding of organic-rich shale reservoirs. Additionally, remote-sensing for oil spills is reviewed. The technical aspects of sensors are summarized and the benefits and limitations of each sensor are given. In the last few decades, as the number of reclamation projects has increased, the diversity of the landscape has also increased, as has the proportion of ecologically valuable elements (such as forests, meadows and water bodies) which can approximate the original landscape with a greater degree of ecological stability. More accurate quantification of the extent of mining activities and reclamation projects is important for exploration of environmental impacts on the ecosystem. In order to address coastal degradation, the Atlantic Andalusian Coastal District has performed beach and dune restoration planning, described by the authors as an example of sustainable coastal management. In the penultimate chapter, the method of the gravitational mass spectroscopy is used to investigate the inhomogeneity of the density in the surface layers of the Earth's crust under the European continent in the area of massive deposits of hard coal. The final chapter describes the petrography, whole-rock major and trace-element geochemistry of lamprophyre dyke reported in southern India.

Science in Short Chapters

**Science in Short Chapters**  
*William Mattieu Williams*  
In series: *Origin, Evolution and Geological History of the Earth*  
Hardcover: 978-1-53614-926-5. $270.00.  
This collection of previously printed articles by W. Mattieu Williams is of interest to all readers who are sufficiently intelligent to prefer sober fact to sensational fiction, but who, at the same time, do not profess to be scientific specialists. The author has combined clearness and simplicity with an attempt at philosophy.
The Earth's Beginning
Robert S. Ball
In series: Space Science, Exploration and Policies
The Earth's Beginning are lectures which were delivered in the Royal Institution of Great Britain. It considers the majestic subject of the evolution of the solar system of which our earth forms a part. The nebular theory discloses the beginning of this earth itself. It shows how the foundations of this solid earth have been laid, and how it is that we have land to tread on and air to breathe. But the subject has a scope far wider than merely in its relation to our earth.

ENVIRONMENTAL SCIENCES

Air Pollution and Industrial Hygiene

Health, Safety and Hygiene in Indoor Environments
Elena V.M. Papadopoulou (International Institute of Energy, Environment and Health, Western Macedonia, Greece)
In series: Environmental Remediation Technologies, Regulations and Safety
Hardcover: 978-1-53614-661-5. $160.00.
Indoor air quality and human health are of continuously growing importance. Indoor air quality may be affected by many factors excluding, but not limited to, more loosely sealed buildings, the use of air purifiers and other pollutant sources (for example, room air fresheners), the use of various chemicals for pesticide management and cleaning, and finally, the use of synthetic building materials and furnishings. In recent years, people have become more aware of potential health and comfort problems that may be associated with poor indoor air quality. It is partly due to the move to more tightly sealed buildings, the implementation of energy conservation programs, and the growing use of laser printers, photocopiersons, and other sources of indoor air contamination. Greater general awareness of environmental issues may also play a part. Most IAQ complaints from building occupants are related to a respiratory headache, irritation, odors, or fatigue. These concerns may be associated with chemical vapors, dust generated in the work environment, contaminants associated with fungal growth (mold), materials infiltrating from outside sources (such as pollen or engine exhaust), or other factors such as elevated carbon dioxide levels. This handbook aims to turn the attention to these subjects and to promote methods and technologies to reduce poor indoor air quality and to distribute outdoor air throughout the building, remove contaminants and odors, and control the indoor temperature and humidity. The information in this guide will help to maintain good indoor air quality in a building, prevent indoor air quality problems, and correct issues that may arise. It will also help to understand the indoor air quality requirements. The structure of this text allows for flexibility in course content and design. It may be used equally well either as a textbook for students or a handbook for environmental consultants, mechanical engineers, building occupants, labor unions and suppliers. Furthermore, this text may be useful data for either the undergraduate or the graduate level. The author wishes to acknowledge Nova Science Publishers, Inc.; with special mentions to Nadya S. Gotsiridze-Columbus and Carra Feagaiga for their editorial support.

Sequencing Batch Reactors: An Overview
Lois K. Mello
In series: Environmental Science, Engineering and Technology
In series: Waste and Waste Management
Softcover: 978-1-53615-462-7. $82.00.
e-book: 978-1-53615-463-4. $82.00.
Sequencing Batch Reactors: An Overview opens with the results of an investigation with the goal of determining the most suitable treatment for tannery effluents. The investigation was carried out on three distinct effluents produced by a tannery located in Venezuela, as well as a mixture of the three. Next, the authors treated leachate originated from the Ouled Berjai landfill by using the sequential batch reactor technique. The leachate was put into two reactors, which differed in the times allocated to each phase. The closing study presents an overview of studies using anaerobic sequencing batch biofilm.
reactors digesting agroindustry wastes for methane production, focusing on operational strategy and perspectives for scale-up.

**Ecology**

**Drylands: Biodiversity, Management and Conservation**

*Victor Roy Squires (Gansu Agricultural University, Lanzhou, China & Institute of Desertification Studies, Beijing International Dryland Management Consultant, Adelaide, Australia), Mahesh Gaur (ICAR-Central Arid Zone Research Institute, Jodhpur, India) and Salah Attia-Ismail (Desert Research Center, Cairo, Egypt)*

In series: *Environmental Research Advances*


Hardcover: 978-1-53615-896-0. $230.00.


This book Drylands: Biodiversity, Conservation and Management, edited by Victor R. Squires, Mahesh K. Gaur and Salah Attia Ismail, fills a gap in the literature admirably. It gets away from ‘species lists’ and designation of species and habitats as ‘endangered’ or ‘at risk’. Instead, it opens up discussion on a range of issues relating to the important matters of biodiversity, land management and efforts at conservation (wise use) of natural resources that support an area’s biodiversity. Dryland ecologists, land use change specialists, policy makers from UN agencies or from bilateral and multilateral donors and other natural resource management agencies will find the book very useful. It is also a valuable resource for universities and colleges teaching geography, environmental studies and development studies in general.

**Key points**

- Provides a synoptic overview of the current problems and prospects for biodiversity conservation in a changing world based on a focus on selected ecosystems across Africa, Asia and the Middle East.
- Discusses the path forward to maintain and improve dryland ecosystems, conserve biodiversity and achieve land protection. This edited volume is devoted to the examination of the implications of the inevitable changes wrought by global change on the welfare and livelihoods of tens of millions of people who live in dryland-dominated regions on all continents except Antarctica. Global change is more than just climate change. The shift to the market economy and demographic factors (population growth, urbanization and resettlement) receive attention here. The implications of change (including an analysis of the drivers of change) and the role of humans as agents of these changes are canvassed. Chapters by leading experts who live and work in lands focus on examples that are drawn from a number of sources including previously unpublished studies. The key purpose is to provide an up to date and in-depth global overview of drylands and give readers insights into the status of these vulnerable biomes and to alert readers to the consequences of a loss of biodiversity to the tens of millions of people, their livestock and the myriad of plants and animals that make up dryland ecosystems across the globe. Maintenance of biodiversity ensures the continued flow of ecosystems’ goods and services on which most of us depend!

**Ecological Integrity and Land Uses: Sovereignty, Governance, Displacements and Land Grabs**

*Laura Westra, PhD (University of Windsor Sessional Instructor, Faculty of Law, Canada and Visiting Professor, Faculty of Jurisprudence, University of Salerno, Italy), Klaus Bosselmann (University of Auckland, New Zealand) and Virginia Zambrano (Faculty of Law, University of Salerno, Italy)*

In series: *Environmental Science, Engineering and Technology*


Hardcover: 978-1-53615-406-1. $230.00.


This book is intended to focus the attention of scholars and policymakers on the ongoing land grabs that occur in all continents, as corporations, conglomerates and powerful governments ally themselves with those who reap economic profits from the dispossession of those who inhabit the lands. Often the dispossession takes place as a legal transaction, even as an internationally sanctioned form of so-called “sustainable development”, something that, in reality, is neither sustainable, nor leading to the development of the communities indigenous to the land, who usually attempt to the best of their ability, to resist, and deny what they view as a forceful hostile occupation, of the lands which constitute their only source of sustenance. This book raises a grave question, as it asks, whether these dispossession might represent grave violations of the rights of peoples to be free from racial discrimination, and to their rights to their own resources and self-determination. When climate change is exacerbated by deforestation, in order to use the land for more profitable cash crops, then it is even possible to view the environmental disasters that ensue as crimes against humanity.
Plant Dormancy: Mechanisms, Causes and Effects

Renato V. Botelho (Research Group in Fruit Crops and Post-harvest, Department of Agronomy, State University of Mid-Western of Paraná – UNICENTRO, Brazil)

In series: Plant Science Research and Practices


Dormancy is a mechanism found in several plant species developed through evolution, which allows plants to survive in adverse conditions and ensure their perpetuation. This mechanism, however, can represent a barrier that can compromise the development of the species of interest, and therefore, the success of its cultivation. It is important to understand the causes, effects, and mechanisms, as well as the technologies for overcoming dormancy of buds, seeds, and plant propagules. In this context, this publication has as a main objective of offering an in-depth view of the dormancy process in cultivated plants, based on a survey of more recent international research on the subject. Written by several researchers from different institutions of education and research, this book presents information on the most diverse species of plants of agronomic and forestry interest. In addition to the physiological, biochemical, and genetic aspects, the chapters also address the possible causes of dormancy, as well as technological issues that are essential for the successful cultivation of several economically important species. The focus of this publication is on temperate fruit species. Classical examples of temperate plants that present dormancy are fruit trees such as apple, pear, quince, apricot, and cherry. These pome and stone fruits are typical representatives of a deciduous temperate climate, wherein trees drop their leaves at the end of the reproductive cycle, consequently entering dormancy. Dormancy has its control effected by factors of a hormonal nature, where the hormone promoters and growth inhibitors are balanced. Edaphoclimatic conditions also affect plant dormancy periods, for the most part through temperature changes. Other chapters in this book are dedicated especially to potatoes, vegetables, as well as forest and forage species, which makes this text a complete and comprehensive work on the subject.

Environmental Conservation

Strategic Advances in Environmental Impact Assessment: Challenges of Unconventional Shale Gas Extraction

Afsoon Moatari-Kazerouni (Environmental Engineering and Management Research Group, Research Group, Ton Duc Thang University, Ho Chi Minh City, Vietnam and Faculty of Environment and Natural Resources, Department of of Water Science and Technology, Ton Duc Thang University, Ho Chi Minh City, Vietnam)

In series: Environmental Science, Engineering and Technology


Shale gas is natural gas that is tightly locked within low permeability sedimentary rock. Recent technological advances are making shale gas reserves increasingly accessible and their recovery more economically feasible. This resource is already being exploited in South Africa, China, the United States and Canada. Shale gas is being produced in large volumes, and will likely be developed in coming years on every continent except Antarctica. Depending on factors such as future natural gas prices and government regulations, further development of shale gas resources could potentially span many decades and involve the drilling of tens of thousands of hydraulically fractured horizontal wells. This development is changing long-held expectations about oil and gas resource availability; several observers have characterized it as a game changer. Abundant, close to major markets, and relatively inexpensive to produce, shale gas represents a major new source of fossil energy. However, the rapid expansion of shale gas development over the past decade has occurred without a corresponding investment in monitoring and research addressing the impacts on the environment, public health, and communities. The primary concerns are the degradation of the quality of groundwater and surface water (including the safe disposal of large volumes of wastewater); the risk of increased greenhouse gas (GHG) emissions (including fugitive methane emissions during and after production), thus exacerbating anthropogenic climate change; disruptive effects on communities and land; and adverse effects on to human health. Other concerns include the local release of air contaminants and the potential for triggering small- to moderate-sized earthquakes in seismically active areas. These concerns will vary by region. The shale gas regions can be found near urban areas, presenting a large diversity in their geology, hydrology, land uses, and
population density. The phrase environmental impacts from shale gas development masks many regional differences that are essential to understanding these impacts.

**Natural Disasters**

**FEMA: Emergency Management, Disaster Contracting and Grants**
*Naomi Stanley*

In series: *Natural Disaster Research, Prediction and Mitigation*

In series: *Government Procedures and Operations*

2020.

Hardcover: 978-1-53616-456-5. $160.00.

Recent hurricanes, wildfires, and flooding have highlighted the challenges that the federal government faces in responding effectively to natural disasters. Chapter 1 discusses FEMA’s progress and challenges related to disaster resilience, response, recovery, and workforce management. Chapter 2 addresses key challenges FEMA faced contracting for goods and services in response to these disasters. FEMA, a component of DHS, provides preparedness grants to state, local, tribal, and territorial governments to help prepare for, prevent, protect against, respond to, recover from, and mitigate terrorist attacks or other disasters. The objectives of chapter 3 are to determine the extent to which FEMA is implementing leading practices for reengineering its grants management processes and incorporating needs into IT requirements; assess the reliability of the program’s estimated costs and schedule; and determine the extent to which FEMA is addressing key cybersecurity practices. Chapter 4 describes SHSP and UASI grant awards during fiscal years 2008 through 2018, and factors affecting grant distributions; and examines the steps that FEMA has taken to strengthen its risk assessment model for allocating preparedness grants, and any additional opportunities to improve the model. Chapter 5 addresses progress and challenges in FEMA’s efforts to manage preparedness grants and GAO’s prior recommendations to strengthen these programs.

**Hurricanes and Wildfires: Impact, Assistance and Recovery**
*Teri Boyd*

In series: *Natural Disaster Research, Prediction and Mitigation*


In 2017, four sequential disasters—hurricanes Harvey, Irma, Maria, and the California wildfires—created an unprecedented demand for federal disaster response and recovery resources. According to FEMA, 2017 included three of the top five costliest hurricanes on record. The National Oceanic and Atmospheric Administration estimated that the cumulative damages from weather and climate disasters in the United States were over $300 billion in 2017 alone. As of June 2018, Congress had appropriated over $120 billion in supplemental funding for response and recovery related to the 2017 hurricanes and wildfires. Further, in October 2017, close to 14,000 federal employees were deployed in response to the disasters.

**Hurricanes, Wildfires and Flooding: Disaster Assistance and Contracting**
*Lydie Yohan*

In series: *Natural Disaster Research, Prediction and Mitigation*


Chapter 1 provides a short overview of issues Congress may consider in its oversight of the Federal Emergency Management Agency’s (FEMA’s) federal assistance during the 2017 hurricane season (e.g., Harvey, Irma, and Maria) and other disasters (e.g., fires in California). In 2017, Hurricanes Irma and Maria damaged much of the electricity grids’ transmission and distribution systems in USVI and Puerto Rico. Chapter 2 provides information on federal support for restoring the electricity grids in Puerto Rico and USVI and factors affecting this support. In 2017 two major hurricanes — Irma and Maria — caused extensive damage throughout Puerto Rico. Chapter 3 describes FEMA’s Public Assistance spending in Puerto Rico and oversight efforts of federal recovery funds, and initial challenges with the recovery process. Chapter 4 provides information on DRF funding provided to Puerto Rico as a result of assistance associated with a major disaster. The primary focus of the territorial and federal efforts thus far has largely been on restoring electric power in Puerto Rico as reported in chapter 5. In September 2017, two major hurricanes — Irma and Maria — struck the USVI, causing billions of dollars in damage to its infrastructure, housing, and economy. Chapter 6 describes the status of FEMA’s Public Assistance program funding provided to the USVI in response to the 2017 hurricanes as of October 1, 2018, and the USVI’s transition to implementing the Public Assistance alternative procedures in the territory. Chapter 7 provides information on DRF funding provided to the U.S. Virgin Islands as a result of assistance associated with a major disaster. Chapter 8 provides information on DRF funding provided to Florida as a result of assistance associated with a major disaster. Chapter 9 provides a brief overview of the major disaster declaration process and federal assistance programs.
potentially available to those affected by the 2019 flooding in the Midwest. Following Hurricane Katrina, Congress required FEMA to establish advance contracts for goods and services to enable the government to quickly and effectively mobilize resources in the aftermath of a disaster. Chapter 10 assesses FEMA and USACE’s use of advance contracts, FEMA’s planning and reporting of selected advance contracts, and challenges, if any, with FEMA’s use of these contracts. Chapter 11 addresses the extent to which federal agencies obligated funds on post-disaster contracts in response to these events, and selected agencies experienced challenges in the planning of selected contracts.

**Issues in Disaster Recovery and Assistance**

*Donatien Moïse*

In series: *Natural Disaster Research, Prediction and Mitigation*


Hardcover: 978-1-53616-308-7. $160.00.


In both 2016 and 2017, 15 separate U.S. disasters resulted in losses exceeding $1 billion each. FEMA provides PA grants to state and local governments to help communities recover from such disasters. If applicants disagree with FEMA’s decision on their PA grant application, they have two chances to appeal: a first-level appeal to be decided by the relevant FEMA regional office and, if denied, a second-level appeal to be decided within FEMA’s Recovery Directorate. Chapter 1 examines the extent to which FEMA ensures the quality of its appeals data and what these data show about PA appeals inventory and timeliness; what steps FEMA has taken to improve its management of the appeals process and what challenges, if any, remain; and the extent to which FEMA developed goals and measures to assess program performance. Chapter 2 provides a short summary of the types of individual assistance programs administered by FEMA following a disaster. It also provides a summary of the criteria FEMA uses in determining which individual assistance programs may be made available to impacted areas following a major disaster declaration, and discusses a proposed rule to change these criteria. FEMA’s IA program provides help to individuals to meet their immediate needs after a disaster, such as shelter and medical expenses. Chapter 3 examines the number of IA declaration requests received, declared, and denied, and IA actual obligations from calendar years 2008 through 2016, the extent to which FEMA accounts for the regulatory factors when evaluating IA requests, and any challenges FEMA regions and select states reported on the declaration process and factors and any FEMA actions to revise them. The Federal Emergency Management Agency’s (FEMA’s) Individual Assistance (IA) program and the Small Business Administration’s (SBA’s) Disaster Loan Program are the federal government’s two primary sources of financial assistance to help individuals and households recover and rebuild from a major disaster as discussed in chapter 4. Hurricane survivors aged 65 and older and those with disabilities faced particular challenges evacuating to safe shelter, accessing medicine, and obtaining recovery assistance. Chapter 5 addresses challenges FEMA partners reported in providing assistance to such individuals, challenges such individuals faced accessing assistance from FEMA and actions FEMA took to address these challenges, and the extent to which FEMA has implemented its new approach to disability integration.

**Natural Disasters: Response, Recovery and Assistance**

*Sonja Torres*

In series: *Natural Disaster Research, Prediction and Mitigation*


In 2017, four sequential disasters—hurricanes Harvey, Irma, Maria, and the California wildfires—created an unprecedented demand for federal disaster response and recovery resources. Chapter 1 provides observations on federal and state preparedness and response coordination for hurricanes Harvey and Irma in Texas and Florida, and the California wildfires; federal preparedness for and response to hurricanes Irma and Maria in Puerto Rico and the U.S. Virgin Islands; and existing and emerging disaster recovery challenges highlighted by these disasters. Chapter 2 provides information on federal financial assistance provided to the Gulf States after major disasters were declared in Alabama, Florida, Louisiana, Mississippi, and Texas in response to the widespread destruction that resulted from Hurricanes Katrina, Rita, and Wilma in 2005 and Hurricanes Gustav and Ike in 2008.

**Stormwater: Sources, Monitoring and Management**

*Ernest O. Nnadi (Centre for Agriculture, Water and Resilience (CAWR), Coventry University, UK)*

In series: *Environmental Science, Engineering and Technology*

2019.

Hardcover: 978-1-53616-162-5. $160.00.


Stormwater Sources, Monitoring and Management is a unique book that identifies sources of stormwater, evaluates stormwater control and monitoring techniques as well as addresses the subject of stormwater management in a ‘climate
changing’ world. From the viewpoint of stormwater as a potential resource, as well as the need to achieve pollution control and sustainability, the book explores the impact of stormwater sources on its quantity, quality and management. It takes a broader look at the issues surrounding sustainable drainage and explores the challenges of monitoring their performance and criteria for evaluating their efficiency. Through contributions from numerous experts in this area of study, from different continents facing diverse stormwater management challenges, this book assesses LID techniques from the viewpoints of quantity, quality, amenity and biodiversity and provides information of stormwater management approaches applied in different parts of the world and how considerations of factors such as environmental protection and forest management, biodiversity and amenity as well as other benefits such as rainwater harvesting and stormwater recycling are driving adoption of sustainable stormwater management approaches and changing the face of cities and suburban areas. This book is a valuable resource for practitioners, engineers, academics, students and regulators and would be helpful to people who are simply considering installing or have installed stormwater management systems in their residential homes or offices or just curious about the efficiency stormwater management techniques in their locality.

Special Topics

Advances in Environmental Research. Volume 66
Justin A. Daniels
In series: Advances in Environmental Research
Hardcover: 978-1-53614-987-6. $250.00.
This compilation opens by presenting a discussion on the main conditions for the successful start-up and operation of full-scale mainstream partial nitrification-anammox technology, advantages of partial nitrification-anammox technology over other technologies of wastewater treatment, and a description of the interactions among key microbial groups and their identification by using metagenomic approaches. Next, one study elucidates the performance of anammox hybrid reactors under various operating conditions to optimize and assess its efficacy for nitrogen removal from wastewater. Four numbers of hybrid reactors conglomering the dual advantages of attached and suspended growth were designed and investigated. The authors seek to produce a soil erosion susceptibility map with selected parameters including elevation, slope, aspect, slope curvature, stream power index, topographic wetness index, cover management factor, land use/land cover, rainfall erosivity, soil erodibility, lineament density, distance from lineament, and distance from stream and drainage density. The weighted linear combination method is applied using remote sensing and geographical information system techniques in the Shiri river basin of Darjeeling, Himalaya. The following study addresses the financial and economic benefits of tourism, and whether these economic benefits are to the detriment of the natural environment. This is done by conducting an investigation into community fishing practices around Mnemba Island. Semi-structured interviews were held with Mnemba Island Lodge staff, local fishermen and local authorities involved in the fisheries around Mnemba. Participatory observations were also used to support the data collected by the semi-structured interviews. The authors present data suggesting that of insolation is of high importance for the structuring of floodplain ecosystems because it has potential to impact floodplain lakes regardless of flooding. It is proposed that future investigations of floodplain aquatic habitats should take into account insolation effects other than those of hydrology. The closing chapter provides a brief review of anchovy characteristics, habitats, use, and eco-friendly treatment of anchovy waste/wastewater for reutilization. Anchovy is an attractive resource for the production of functional compounds such as antimutagenic, antifungal, antioxidant and antibacterial agents.

Advances in Environmental Research. Volume 67
Justin A. Daniels
In series: Advances in Environmental Research
Hardcover: 978-1-53615-009-4. $250.00.
e-book: 978-1-53615-010-0. $250.00.
This compilation highlights current knowledge on iodide mobility in a soil-plant system and provides a theoretical and experimental basis for a better understanding of the geochemical behaviour of iodine in soils, including its availability in the food chain. Following this, the authors provide a comprehensive overview of the uses of iodide salts by focusing on their applications in plants and microbiology, mechanisms of action and possible new uses in histology. The penultimate study contributes to a better understanding of Piauí’s vegetation through a floristic survey, phytosociological study and knowledge about the economic potential and geographic distribution of species from an area belonging to the municipality of Brasileira, north of Piauí, Brazil. Fifty five families, 126 genera and 141 species represented the flora. Biosphere reserves face the challenge of sustainable development. They have to foster economic development that is ecologically and culturally sustainable. Paradoxically, the demographic-economic-entrepreneurial nexus of biosphere reserves has not been researched, an omission addressed in the closing chapter by studying the towns of the Gouritz Cluster Biosphere Reserve in South Africa.
Chapter one of Advances in Environmental Research. Volume 68 contains a rudimentary inferential analysis concerning conditions in the US such as the variation of the atmospheric content of carbon dioxide over two hundred and seventy two years up to 2016, and the contribution of major environmental sources to the atmospheric amount of carbon monoxide, nitrogen oxide, sulphur dioxide and methane along with emissions caused by hydrofluorocarbons, perfluorocarbons, sulphurhexafluoride and nitrogentrifluoride. The following chapter aims to present an overview of environmentally exploitable properties, as well as present and potential prospects of bacterial extracellular polymeric substances in addressing real life environmental problems. The authors go on to review the heavy metal processes that occur in the soil and leafy vegetables, particularly in cabbage, and the relationships between the soil levels and metal contents in plants. An approach for the utilization of microorganisms from shallow hydrothermal vent sediments in environmental biotechnology is also presented. Next, it is shown that SDG 13 and SDG 15 can be addressed simultaneously if policy makers and practitioners focus on reducing the costs of telecommunications and the internet, as this would reduce the costs for tablets and mobile phones, enabling improved access to information and practice on Ecosystem Based Adaptation and microforestry schemes. The authors discuss the responsibility of the Water Board of Nicosia to operate the water distribution network that covers more than 91 sq. km, water mains of 1,280 km length, and the management of the 13 water reservoirs. They also show how water management is governed and how it affects the Island of Cyprus. The subsequent chapter indicates that concentrations of trace elements in sediments and brackish water, and even interstitial waters, may not provide an accurate view of the levels of contamination and their potential ecotoxicity in the Northern Gulf of Mexico. The closing paper focuses on the land-use/cover dynamicity and its impact on the land surface temperature of Lodhama river basin in Darjeeling Hill area during the period of 2001 and 2016.

Chapter one of Advances in Environmental Research. Volume 69 opens with an overview of recent studies regarding toxic effects of chlorpyrifos and the methods of its removal, focusing mainly on the generation of its oxo-analogue, chlorpyrifos-oxon, as a result of organophosphate metabolism by cytochrome P450s, and the influence on some physiologically important enzymes. Following this, a comprehensive overview of the diversity of Basidiomycetes species present in polluted areas is provided, as well as potential uses in the restoration of these areas. Basidiomycetes fungi promote immobilization of mycogenic metals through the precipitation of oxalates or via ligand binding, as well as passive bio-absorption and accumulation in their biomass. Ecosystems of the European North show low tolerance to anthropogenic impact and very slow succession recovery. This largely determines the development of biota and ecosystems. Among the types of impact, the authors propose that special attention should be paid to those associated with gathering, hunting, and grazing, and aimed mostly on the use of bioresource potential of landscapes. Next, a short introduction on the composition and sources of oil pollutants in the environment, the authors review all transformation processes that affect composition of oil pollutants in contaminated soils. The authors also describe detailed information on the toxicity of chlorpyrifos and its metabolites, the thermobility of chlorpyrifos in soil and water following spraying, and residues of its metabolites on treated edible plants. In the penultimate chapter, the RUSLE model coupled with transport limited sediment delivery function were used to predict the longtime average annual soil loss, and to identify the critical erosion-/deposition-prone areas of Lodhama river Basin in Eastern Darjeeling himalaya, India. Lastly, although microorganisms cannot destroy pollutants, this collection discusses how they can alter their chemical properties via a surprising array of mechanisms. The focus is on the metals and metalloids that contaminate waters and are most commonly found in the environment, including: lead, chromium, mercury, uranium, selenium, zinc, arsenic, cadmium, silver, gold, and nickel.

Chapter one of Congressional Policies, Practices and Procedures examines the implementation of certain Coast Guard programs, including those involving performance monitoring, the Service’s Capital Investment Plan, and commercial fishing vessel safety. Chapter 2 discusses Coast Guard and maritime transportation programs. Chapter 3 reviews the fiscal year 2019 budget request for the Coast Guard and maritime transportation programs.
Chapter 1 examines how BLM’s actual costs and potential oil and gas well liabilities have changed for fiscal years 2010 through 2017 and the extent to which BLM has implemented its well and bond review policies. Chapter 2 reviews oil and gas lease suspensions on federal lands managed by BLM and examines the extent of and reasons for such suspensions and the approach BLM uses to monitor the status of lease suspensions. Chapter 3 describes the distribution of BLM’s oil and gas inspection and enforcement program’s workload and workforce among agency field offices for the most recent 5 years and examines the extent to which BLM conducted internal control reviews in accordance with its July 2012 oversight policy for fiscal years 2013 through 2018. U.S. oil and natural gas production has increased substantially since 2008. These increases have important policy implications for energy markets, infrastructure, security, and the environment as reported in chapter 4. Chapter 5 discusses the recent oil market trends and geopolitical factors that have contributed to price escalation since the start of 2018. Chapter 6 reviews the federal government’s response, restoration, and research efforts after the Exxon Valdez and Deepwater Horizon oil spills. This chapter examines

Environmental Protection Agency (EPA): Issues, Challenges and Policies
Coby Schaefer
In series: Environmental Remediation Technologies, Regulations and Safety
e-book: 978-1-53614-934-0. $230.00.
Since 2009, the U.S. Environmental Protection Agency (EPA) has proposed and promulgated numerous regulations to implement the pollution control statutes enacted by Congress. Critics have reacted strongly. Some, both within Congress and outside of it, have accused the agency of reaching beyond the authority given it by Congress and ignoring or underestimating the costs and economic impacts and overestimating the benefits of proposed and promulgated rules.

Focus on Oil and Gas: Management, Production and Spills
Olivia B. Wilder
In series: Environmental Remediation Technologies, Regulations and Safety
Hardcover: 978-1-53616-325-4. $160.00.
Chapter 1 examines how BLM’s actual costs and potential oil and gas well liabilities have changed for fiscal years 2010 through 2017 and the extent to which BLM has implemented its well and bond review policies. Chapter 2 reviews oil and gas lease suspensions on federal lands managed by BLM and examines the extent of and reasons for such suspensions and the approach BLM uses to monitor the status of lease suspensions. Chapter 3 describes the distribution of BLM’s oil and gas inspection and enforcement program’s workload and workforce among agency field offices for the most recent 5 years and examines the extent to which BLM conducted internal control reviews in accordance with its July 2012 oversight policy for fiscal years 2013 through 2018. U.S. oil and natural gas production has increased substantially since 2008. These increases have important policy implications for energy markets, infrastructure, security, and the environment as reported in chapter 4. Chapter 5 discusses the recent oil market trends and geopolitical factors that have contributed to price escalation since the start of 2018. Chapter 6 reviews the federal government’s response, restoration, and research efforts after the Exxon Valdez and Deepwater Horizon oil spills. This chapter examines

Crimea: The History of Interaction between Man and Nature
Fedor N. Lisetskii (Belgorod State National Research University, Belgorod, Russia; Director of the Federal-Regional Center of Aerospace and Surface Monitoring of the Objects and Natural Resources, Russia)
In series: Environmental Research Advances
Softcover: 978-1-53615-004-9. $95.00.
e-book: 978-1-53615-005-6. $95.00.
With a wide variety of soil and climatic conditions as well as types of landscape in its territory, the Crimean Peninsula has a very long history of economic activity that can be broken down into multiple stages. There was an especially significant change in the natural landscapes on the peninsula during the Great Greek Colonization of the Northern Black Sea coast, when several major agricultural zones emerged in Crimea and the subsequent agricultural impacts on the soils continued for a millennium. The results give an idea about the specifics of the modern landscapes in terms of economic use, as well as human transformation of the original natural landscapes. The traces of land division in the form of linear structures that can be seen in satellite images allow researchers to reconstruct the way that agricultural landscapes were laid out in ancient times by extrapolating from the most significant components (land use and land use planning systems, population centers, transport routes etc.). The authors of this study used natural science methods to study the artifacts and terrains of ancient agriculture in Crimea to try and reconstruct the way that land resources were used for agricultural purposes in ancient times and get a comprehensive idea about how ancient agriculture in Crimea was organized and what resources it relied upon. To achieve that, a comprehensive method was developed that included an assessment of the suitability of specific areas for agriculture, identification of surviving agricultural artifacts (land division boundaries (ramparts, ditches), roads, etc.) and a search for soil properties indicative of past agricultural activities. The results of studying the land management and new approaches to defining the boundaries of ancient land use are presented. For the first time, the relic signs of agricultural loads in the post-antique lands have been established. The significance of the results obtained can hardly be overstated when it comes to understanding the ancient agricultural practices and their impact on the existing agricultural landscapes since Crimea is unique in that the traces of ancient agriculture have been preserved here much better than in other parts of the world that used to be sites of ancient civilizations. Preserving the look and feel of ancient agricultural landscapes is a new task. As the authors have demonstrated, this task can be accomplished by integrating the findings of geographical and archeological studies with high tech methods (geo-modeling and automated decryption of remote Earth sensing data).
Handbook of Remediation for Complex Environmental Problems
Sadia Ameen (Energy Materials & Surface Science Laboratory, Solar Energy Research Center, School of Chemical Engineering, Chonbuk National University, Jeonbuk, Republic of Korea), M. Shaheer Akhtar (New & Renewable Energy Material Development Center (NewREC), Chonbuk National University, Jeonbuk, Republic of Korea; Department of Semiconductor and Chemical Engineering, Chonbuk National University, Duckjin-Dong, Jeonju, Chonbuk, Republic of Korea; School of Semiconductor and Chemical Engineering, Center for Advanced Radiation Technology and The New and Renewable Energy Center, Chonbuk National University, Jeon-Ju, Republic of Korea) and Hyung Shik Shin (Energy Materials & Surface Science Laboratory, Solar Energy Research Center, School of Chemical Engineering, Chonbuk National University, Jeonbuk, Republic of Korea)

In series: Environmental Remediation Technologies, Regulations and Safety

The rapid pace of industrialization and its resulting by-products have affected the environment by producing hazardous wastes, which have been released into the environment. Environmental pollution is a global menace, the magnitude of which is increasing day-by-day due to urbanization, heavy industrialization, and changing lifestyles. Nanomaterials as functional building blocks are an ideal candidate for investigation into the dependence of structural, optical, electrical, and magnetic properties of the quantum confinement effect and morphology, which paves the way for novel nanotechnological applications. Both physical and chemical properties of nanostructures are associated with their size, shape, and dimensionality; therefore, morphology controlled synthesis of functional nanostructures gains importance from a scientific and technological perspective. Semiconductor nanomaterials at the nanoscale are gaining significant attention in the areas of energy conversion and storage, sensing, electronics, photonics, and biomedicine. In this book, we discuss semiconductor metal oxide nanostructures like TiO2, ZnO, conducting polymers and nanocomposites for their efficient detection of harmful and toxic chemicals, and nanomaterials for photocatalytic degradation, with an emphasis on the applications of semiconducting materials for renewable energy. The book includes a brief literature survey, properties and the latest research advances in the development of various metal oxide nanostructures, and how nanocomposites and conducting polymer based nanomaterials are efficient for environmental remediation. The application of nanomaterials in the detection and removal of pathogens provides greater sensitivity, lower cost, shorter turn-around times, smaller sample sizes, in-line and real-time detection, as well as higher throughput and portability in environmental remediation. Furthermore, semiconductor photocatalysis for remediation has real potential for combating water pollution. This book provides a comprehensive look at the morphological, structural, crystalline, optical, electrical, and electrochemical properties of semiconducting metal oxides and their applications for environmental cleaning. The preparation and modification of semiconducting nanomaterials could be promising for the reliable and effective detection of harmful chemicals, and renewable energy.

In the Wilds of South America
Leo E. Miller

In series: Environmental Science, Engineering and Technology
Hardcover: 978-1-53616-074-1. $230.00.

Leo E. Miller’s experience as a field-naturalist consists of nearly six years of almost continuous exploration in South America, and embraces practically all of the republics of that continent. The purpose of this narrative is to follow the course of these explorations into the tropical jungles of the Amazon, Paraguay, Orinoco, and others of South America’s master rivers, and to the frigid heights of the snow-crowned Andes.
Several mechanisms of Si-based biostimulators were used in laboratory, greenhouse, and field tests. Si-rich soil amendments, Si fertilizers, and Si-rich substances can mitigate the negative influence of Cd on the growth of various plants, including rice. The main aim of this research was to summarize the data from literature and the investigation to understand the mechanisms of the Si effect on the migration and transportation of Cd in the paddy soil-rice system. This system was separated into two parts – the soil and the plant – and each part was studied separately.

Si-rich soil amendments, Si fertilizers, and Si-based biostimulators were used in laboratory, greenhouse, and field tests. Several mechanisms of Si-Cd interactions in the soil-plant system (precipitation and sorption in soil, accumulation in roots
and reduction Cd transport in apoplast and symplast of roots, stem and leaves), were investigated in detail and knowledge about these mechanisms were used for elaborating the practical recommendation. The field tests demonstrated that the use of Si-rich materials can reduce Cd in the rice grain by 50 to 90%, and other pollutants, including As, Cu, Hg, and Pb, by 40 to 95%. The combination of Ca- and Si-rich substances reinforced the reduction of Cd mobility and grain accumulation and is a prospective soil decontamination and food safety technology. The foliar application of Se can also provide an additional reduction of Cd accumulation in the rice grain. Our field tests showed that the application of Si-rich substances makes it possible to reduce traditional NPK fertilizer application rates by 20 to 30% without reducing the rice yield. This effect will also reduce the amount of Cd entering the cultivated soil. The data from the tests provides a reason to strongly recommend the use of Si-rich materials for the reduction of Cd accumulation in rice grain. Si-rich materials can also be used to reduce Cd accumulation in fruits of other cultivated plants.

Studies of Trees
Jacob Joshua Levison
In series: Environmental Research Advances
Hardcover: 978-1-53616-016-1. $195.00.
e-book: 978-1-53616-017-8. $82.00.
In presenting this volume, the author is aware that there are several excellent books, dealing with one phase or another of tree life. It is believed, however, that there is still need for an all-round book, adapted to the beginner, which gives in a brief and not too technical way the most important facts concerning the identification, structure and uses of our more common trees, and which considers their habits, enemies and care both when growing alone and when growing in groups or forests.

Understanding the Nature of Science
Patrick Lindholm
In series: Science, Evolution and Creationism
Softcover: 978-1-53616-016-1. $82.00.
e-book: 978-1-53616-017-8. $82.00.
In fluid-dynamics, several motivating factors can spur new lines of inquiry. Beginning with considerations on the exchange of momentum that takes place at small scales inside a fluid, and after introducing a generalized categorization of different types of fluid media, Understanding the Nature of Science presents a critical analysis of contemporary issues which are being debated in the scientific community. Next, the authors present an evolutionary ecological approach in which human knowledge is studied as the ecology of interacting data-information-knowledge systems developing in time as a consequence of incessant learning from interactions with the environment on various levels of organization. The concluding section suggests the use of problem-based learning to promote conceptual changes from the “Nature of Science” naive views, usually found in students, to more informed views.

Water Purification by Micelle-Clay Nano-Particles
Shlomo Nir (University of Jerusalem, The R.H. Smith Faculty of Agriculture, Food and Environment, Rehovot, Israel) and Uri Shuali (Research Scientist (Retired), Israel Institute for Biological Research (IIBR), Israel)
In series: Air, Water and Soil Pollution Science and Technology
Hardcover: 978-1-53614-958-6. $195.00.
This book focuses on water purification by micelle-clay nanoparticles. The micelle-clay complex is composed of an organic cation (surfactant) with a long alkyl chain, e.g., ODTMA (octadecyltrimethylammonium) that spontaneously forms micelles of several nm in diameters at small concentrations. The positively charged micelles interact with a negatively charged clay (bentonite) at optimal ratios. The resulting complex has a large surface area per weight; it includes large hydrophobic parts and has an excess of a positive charge. The complex is insensitive to higher temperatures (50 OC), to pH values in the range of 2-11, or ionic strengths. Production of powdered and granulated complexes is described. The material characteristics of the micelle-clay complex differ from those of organo-clay of the same composition, which is formed by the interaction of monomers of the surfactant with the clay (Chapters One and Two). Model calculations enable simulations and predictions of removal of pollutants from water in batch or filtration experiments, and can yield cost estimates (Chapter Three). Laboratory and pilot experiments (Chapter Four) yield efficient removal from the water of (i) hydrophobic and anionic organic molecules: herbicides, humic acid, dissolved organic matter, and pharmaceuticals; (ii) inorganic anions, e.g., perchlorate; and (iii) microorganisms: bacteria, viruses, and parasites, e.g., cryptosporidium, which is resistant to chlorination. The (above) use of a micelle-clay complex indicated a big advantage in comparison with activated carbon. Low cost regeneration of used
filters after bacteria adsorption is described. Biocidal effects of cations, e.g., ODTMA are demonstrated; released cations during filtration enhanced the filter efficiency. The released cations are removed from water before consumer use by another filter containing activated carbon. Drinking water from lakes is forbidden during cyanobacteria bloom due to harmful toxins. Filtration by the granulated micelle-clay complex and killing of cyanobacteria by ODTMA cations are described. Water purification by other clay-composites such as liposome- and polymer-clay is described in Chapter Five. Collaboration between technologies of water purification are found in Chapter Six: (i) Incubation of grey water in a moving bed biological reactor followed by filtration by the micelle-clay granulated complex enables water reuse at low cost. (ii) Filtration combined with degradation by solar photo-Fenton processes is a promising tertiary treatment of wastewater, including efficient removal of problematic pharmaceuticals. (iii) A new design of the micelle-clay complex may yield enhanced capacity for removal of microorganisms from water by combining filtration with biocidal action of free cations. This book describes inventions in material science and developments of computational procedures for simulations and predictions, and is an authoritative and stimulating reference for researchers, engineers and students involved in water treatment and adsorption processes.

**Zone Policeman 88: A Close Range Study of the Panama Canal and Its Workers**

*Harry A. Franck*

In series: *Central America and the Caribbean*


Softcover: 978-1-53615-000-1. $95.00.

This compilation highlights current knowledge on iodide mobility in a soil-plant system and provides a theoretical and experimental basis for a better understanding of the geochemical behaviour of iodine in soils, including its availability in the food chain. Following this, the authors provide a comprehensive overview of the uses of iodide salts by focusing on their applications in plants and microbiology, mechanisms of action and possible new uses in histology. The penultimate study contributes to a better understanding of Piauí’s vegetation through a floristic survey, phytosociological study and knowledge about the economic potential and geographic distribution of species from an area belonging to the municipality of Brasileira, north of Piauí, Brazil. Fifty five families, 126 genera and 141 species represented the flora. Biosphere reserves face the challenge of sustainable development. They have to foster economic development that is ecologically and culturally sustainable. Paradoxically, the demographic-economic-entrepreneurial nexus of biosphere reserves has not been researched, an omission addressed in the closing chapter by studying the towns of the Gouritz Cluster Biosphere Reserve in South Africa.

**Waste**

**The Activated Sludge Process: Methods and Recent Developments**

*Benjamin Lefèbvre*

In series: *Environmental Remediation Technologies, Regulations and Safety*


Softcover: 978-1-53615-202-9. $95.00.
e-book: 978-1-53615-203-6. $95.00.

In this collection, the authors report on the pretreatment methods for waste activated sludge based on pulsed electric field and corona discharge techniques. The effects of pulse magnitude, frequency, temperature and pretreatment time are demonstrated on the basis of cell membrane electroporation. The influence of voltage polarity, frequency, magnitude, treating time and temperature has also been demonstrated. A description of fundamental techniques in molecular biology for the analysis of the microbiota of activated sludge is provided. Activated sludge is a heterogeneous system of organisms, organic and inorganic material, and therefore giving a specific protocol for each molecular technique would be imprudent. The authors go on to discuss the Monod model, which provides a functional relationship between specific growth rate and substrate concentration in the bulk. Important research efforts dedicated to adequate use of the Monod model are presented, consolidating knowledge from activated sludge and biofilm modelling, identifying misdirections, and setting parameters for further research. In one study, different microwave power outputs and times were optimised for sludge solubilisation without evaporation loss in waste activated sludge from two different sources. The variable effects of pre-treatments on extracellular polymeric substances fraction, cellular oxidative stress and solubilisation of both sludges were evaluated to understand the impact of sludge complexity. The penultimate chapter examines how toxic carbon sources can cause higher residual effluent dissolved organic carbon than easily biodegraded carbon sources in the activated sludge process. Based on the variations of chemical components of activated sludge, mainly intracellular storage materials, extracellular polymeric substances and soluble microbial products, the performance and mechanism of toxic carbon on the activated sludge process can be clarified. The purpose of the final study is to research the supplementation of different concentrations of substrate on the degradation rate of xenobiotics, and to determine the optimal concentrations of auxiliary substrates that are most beneficial. The results show that sugar and peptone can affect 2,4-D degradation rate by several different degrees at different concentrations.
Landfill Leachate: Control, Treatment and Environmental Impact
**Gerardo Morrison**

In series: *Environmental Remediation Technologies, Regulations and Safety*

Softcover: 978-1-53616-523-4. $82.00.
e-book: 978-1-53616-524-1. $82.00.

In Landfill Leachate: Control, Treatment and Environmental Impact, the treatment of landfill leachate by ozonation process was investigated. For this purpose, the ozonation experiments were carried out at high pH on the effluent of pretreated with lime. The chemical oxygen demand removal efficiencies of 43% and 55% were obtained for pre-treated with lime and ozonation processes, respectively. Following this, the authors review the application of AnSBBR for the treatment of landfill leachate focusing on the selection of the biomass type, biomass acclimation strategy, treatment under different biodegradability conditions, kinetic studies, growth of biomass and its behavior on the inert support. Lastly, the results obtained in the oxidation of a concentrate from reverse osmosis of a sanitary landfill leachate are discussed. A combined treatment of electrocoagulation followed by electro-fenton was applied using iron consumable anodes and the influence of the applied current intensity, process duration, initial pH and stirring speed was assessed.

New Horizons in Wastewaters Management: Emerging Monitoring and Remediation Strategies
**Elvis Fosso-Kankeu (School of Chemical and Minerals Engineering, Faculty of Engineering, North-West University, Potchefstroom, South Africa)**

In series: *Environmental Science, Engineering and Technology*


Hardcover: 978-1-53615-659-1. $230.00.

In the past few years, there has been a considerable increase in the number of new and emerging pollutants in the limited water resources around the world, posing a serious threat to human health and the ecosystems. These pollutants, which are also referred to as new chemicals without regulatory status, are poorly understood and therefore not properly monitored or effectively removed from wastewater using conventional methods. Relevant topics addressing these challenges are presented in this book containing 12 chapters, which are consequently divided into two sections (Section 1: Pollutants in Wastewater and Section 2: Wastewater Remediation Strategies). The first section provides a systematic review of recent detection methods suitable for the rapid and accurate identification of some emerging pollutants from wastewater. Further development in the book fairly complement the first part by providing solutions for the removal of the emerging pollutants from wastewater and restoration of usable water; innovative approaches encompassing inter-disciplinary processes supported by sustainable technologies are therefore the focus of the second part of the book. The enhancement of bioreactor systems with consideration of volumetric organic loads, membrane configurations and reactor types has been highlighted by authors as strategies to ensure increased biomass proliferation, high effluent production rates and high quality effluents. The development of smart materials for pollutants removal from wastewater being a promising trend for remediation of water pollution, could not be ignored in this book, which aims to emphasize on the latest sustainable and effective technologies. This has been taken care in a few chapters which that explore the synthesis of nanocomposite for various applications; in one, the synthesis of nanocomposite hydrogels (NCHs) has been contemplated to produce adsorbents with improved thermomechanical, electrical, optical, swelling properties and adsorption capacity contrasted with the traditional polymeric hydrogel; while a separate chapter covers a brilliant approach consisting to combine nanoparticles, carbon nanotubes and organic polymers to develop effective antimicrobial compounds with the potential to exhibit microbicidal activities against bacteria and fungi. The ability to predict and assess the performance of the treatment process is very important to ensure that the system remains effective. This is the topic of two chapters that cover the use of models to predict the feasibility of reactions and the structural suitability of adsorbents. The book therefore covers a complete set of information for an inter-disciplinary approach to wastewater monitoring and treatment.

Wastewater Treatment: Processes, Uses and Importance
**Adriana Magdalena**

In series: *Waste and Waste Management*

2019.

Softcover: 978-1-53616-370-4. $95.00.
e-book: 978-1-53616-371-1. $95.00.

Wastewater Treatment: Processes, Uses and Importance begins by providing information about wastewater treatment and its various application, especially in agriculture sectors. Some information about wastewater use and regulation in Saudi...
Arabia is also discussed. The main characteristics of the natural oxidizing pond system and the activated sludge procedure are described and their performance in the abatement of physico-chemical, bacteriological and virological pollution is discussed. Next, the authors describe and discuss the most common wastewater treatment processes and the importance of the activated sludge process in wastewater treatment, as well as introduce the idea of implementing microbial fuel cells into the procedural design of wastewater treatment for resource recovery. This compilation also covers strategies aimed at minimizing the expense of water during every stage of energy and biofuel production, as well as forms of reuse and recycling that guarantee the utilization of wastewater in order to develop the circular economy in biogas and bioethanol plants. Characteristics of cultivated bio-granules including the number of granules, density, sludge volume index, settling velocity, and physical strength are studied and their performance in treating petroleum and other types of wastewater is investigated. Following this, the authors provide an overview of the achievements of studies in which anaerobic sequencing batch biofilm reactors have been used to co-digest agro-industrial wastes for the production of methane, with a focus on operational strategy and perspectives for energy estimations. The closing study discusses the characteristics of grey water and available methods for its recycling and reuse. Grey water is the wastewater from homes, excluding black water, which typically makes up 50 to 80% of wastewater.

**Biology**

**A Closer Look at Metalloproteinases**

*Lena Goodwin*


Hardcover: 978-1-53616-517-3. $160.00.

A Closer Look at Metalloproteinases first presents an analysis of the matrix metalloproteinases system in two common neurodegenerative disorders, namely age-related macular degeneration and Alzheimer’s disease. Next, this collection aims to evaluate the expression of matrix metalloproteinase-9 in nasopharyngeal carcinoma patients. The cross-sectional analytic study enrolled 106 patients with nasopharyngeal carcinoma based on radiologic and histopathological examination. The patient never underwent radiotherapy, chemotherapy and/or a combination. Matrix metalloproteinase-9 was assessed using immunohistochemical staining of matrix metalloproteinase-9 in the anatomic pathology department. The authors go on to discuss the matrix metalloproteinases family, their structural organization, functions and role in cardiovascular disease.

Data about the role of matrix metalloproteinases in the pathogenesis of psoriasis is summarized. In psoriasis, matrix metalloproteinases facilitate structural remodeling of the epidermis that, in turn, results in the development of psoriatic plaques. Additionally, pregnancy is a very peculiar event in which the uterus undergoes intense morphophysiological modifications, especially related to vascular remodeling and angiogenesis, as well as trophoblast invasion, which occurs in early pregnancy period until reaching maternal spiral arteries and replacing the endothelium forming the endovascular-trophoblast. Such vascular modifications ensure the high-flow and low-pressure blood supply to the developing fetus, which in turn requires more and more space, causing the uterus to become enlarged and distended. In this context, an orchestrated regulation of matrix metalloproteinases and their endogenous inhibitors is essential for proper gestational development. In the penultimate chapter, tissue components, matrix metalloproteinases properties and functions, bone modelling, remodelling and resorption, repair and regeneration, and pathological bone resorption are discussed. The concluding chapter explores the way in which protein tyrosine phosphatases are important targets that are known to play a key role in the development of chronic degenerative diseases such as obesity, diabetes, and some neurological diseases.

**Beta-Galactosidase: Properties, Structure and Functions**

*Elay Kras*

e-book: 978-1-53615-612-6. $95.00.

β-galactosidase is an enzyme responsible for catalyzing the hydrolysis of the lactose β-1,4 linkage into α-D-glucose and β-D-galactose. β-galactosidase is found in plants, animals and microorganisms. In Beta-Galactosidase: Properties, Structure and Functions, the authors discuss the main microorganisms that produce β-galactosidase, the characteristics of the culture media, bioprocessing parameters, the most relevant downstream steps used in the recovery of microbial β-galactosidase, as well as the main immobilization techniques. Next, this compilation examines β-galactosidases classification, mechanisms, characterization and applications. Recent advances in galacto-oligosaccharides production and purification are also covered, and different challenges and future perspectives are discussed. In the closing study, strains with β-Galactosidase activity were isolated from 25 Yak Yoghourt samples collected from the Gannan pasturing area of Gansu Province. An efficient β-galactosidase producing strain SYA2 screened out from 21 strains was identified as Enterobacter sp. by means
of morphological feature observation, physiological and biochemical characteristics measurement, and 16S rDNA sequence analysis.

**Mitogen-Activated Protein Kinases (MAPKs): Activation, Functions and Regulation**
*Charles K. Hester*

In series: *Cell Biology Research Progress*
Softcover: 978-1-53616-138-0. $69.00.
e-book: 978-1-53616-139-7. $69.00.

Mitogen-Activated Protein Kinases (MAPKs): Activation, Functions and Regulation opens with a summary of the present knowledge about MAPK, with special emphasis on p38 and c-Jun N-terminal kinase. The authors focus on how these signaling pathways are engaged during some infections with intracellular parasites. The authors also describe selected regulatory aspects of circadian clocks in vertebrates, exploring an intriguing link to MAPK. Circadian clocks are time-tracking systems that provide organisms with a survival advantage. Cadmium, one of the toxic metals, is an important occupational and environmental pollutant that damages various organs, especially the kidney. The concluding study proposes that the type of kidney cell and severity of cadmium-induced cellular stress appear to determine the effect of MAPK on cell fate.

**Parasitoids: Biology, Behavior and Ecology**
*Emily Donnelly*

In series: *Parasites and Parasitic Diseases*
Softcover: 978-1-53615-197-8. $82.00.
e-book: 978-1-53615-198-5. $82.00.

Most insect parasitoids are related to two insect orders, Diptera and Hymenoptera, some having a specific host while others have a vast host range. As such, the opening chapter of Parasitoids: Biology, Behavior and Ecology discusses the influence of host preference and host specificity in biological control programs and their role in different biological control methods. The behavioral responses of parasitoids can determine the efficiency of a parasitoid species to control host pests. The functional response is one of the most important behavioral responses. The authors show that type II functional response is more common than the other types (I, III, IV and V) of functional response for most parasitoid species. In some research, type III functional response was also reported for parasitoids. The closing study hypothesized that conditioned parasitoids will parasitize more target hosts compared with individuals without prior conditioning. In conditioning experiments, females of the wasp *Trichogramma cacoeciae*, a generalist egg parasitoid, oviposited in *Lobesia botrana* eggs while exposed to *L. botrana*’s synthetic sex pheromone. Contrary to the hypothesis, this treatment failed to increase the parasitism rate in a subsequent exposure to the conditioned olfactory cue.

**Proteomics: Advances in Research and Applications**
*Ricardo Parker*

In series: *Systems Biology - Theory, Techniques and Applications*
2020.
Softcover: 978-1-53616-440-4. $82.00.
e-book: 978-1-53616-441-1. $82.00.

This compilation provides a brief overview of proteomic techniques used in acute leukemia, including the high-throughput reverse phase protein array, which will highlight the importance of measuring proteins. Following this, the authors discuss the molecular mechanism of oseltamivir and the advantages and disadvantages of using it. Proteomics- and transcriptomics-based alternatives to oseltamivir are described as well. Additionally, the most recent research studies aiming to identify biomarkers for the early prediction of spontaneous preterm labor using mass spectrometry-based proteomics are reviewed. In order to understand the mechanisms of efficient degradation of lignocellulosic biomass, a comprehensive analysis of carbohydrate-degrading and metabolic enzymes is required. As such, the authors summarize a proteome analysis of *C. cellulovorans* cultured with different carbon sources, and provide some insights as to how *C. cellulovorans* optimizes diverse enzymes depending on carbon sources. The concluding chapter focuses on comparative fluorescence gel electrophoresis, which was invented in 2009 and has since then become the prime method for reproducible coordinate assignment in two-dimensional protein polyacrylamide gel electrophoresis.
Pseudomonas aeruginosa: A Review and Directions for Research
Chee Fah Wong, PhD, and Hamidah Idris (Department of Biology, Faculty of Science and Mathematics, Universiti Pendidikan Sultan Idris, Perak, Malaysia)

In series: Bacteriology Research Developments
2019.
Hardcover: 978-1-53616-100-7. $195.00.

Pseudomonas aeruginosa is characterized by its metabolic versatility and is found ubiquitously in soil and aquatic habitats and persists survival on various surfaces of plants, animals and humans. Diversity in Pseudomonas characteristics have led to recent technological advances and lay out important avenue of research focused on the role of Pseudomonas and the molecular mechanisms of their beneficial actions. This book brings together respected P. aeruginosa experts from around the world to provide timely, extensive and updated reviews of Pseudomonas research covering various aspects from fundamental taxonomy of Pseudomonas to applications in medical, environmental and industrial fields including biofilm development, quorum sensing, heavy metal bioremediation, photodynamic therapy, lipoxygenase biocatalysis properties and, finally, molecular engineering of genetic tools for Pseudomonas protein expression. This book provides essential reading for scientists working with Pseudomonas and serves as a ready reference and text book for graduate students, young field microbiologists and research scientists in academia, research institutes and industry.

The Many Benefits of Lactic Acid Bacteria
Jean Guy LeBlanc andAlejandra de Moreno de LeBlanc (Centro de Referencia para Lactobacilos, San Miguel de Tucumán, Argentina)

In series: Bacteriology Research Developments
In series: Public Health in the 21st Century
Hardcover: 978-1-53615-388-0. $230.00.

Lactic Acid Bacteria (LAB) are a heterologous group of microorganisms that have been isolated from numerous ecological niches, including fermented foods, plants, and the gastrointestinal tract of animals. Because of their “generally regarded as safe” status (GRAS), there has been great interest in using these microorganisms in food production, as probiotic microorganisms or as biotechnological tools. This book describes some of the many benefits of LAB including i) their use in foods where advances in the fight against spoilage and pathogenic microorganisms in foods, their thermotolerance, their microencapsulation, and responses to osmotic challenges will be discussed; ii) their capacity to produce beneficial compounds including bioactive peptides, biosurfactants, gamma-aminobutyric acid, and antimicrobial products such as organic acids, hydrogen peroxide, bacteriocins, and peptidoglycan hydrolases; and iii) their effect on health and other applications such as their use as a DNA vaccine delivery system, bile-salt hydrolase, and exopolysaccharides production as well as the use of spore forming LAB. This new book is a compilation of topics that have been written by experts from all over the world (Argentina, Brazil, Greece, Mexico, and Thailand) who work in different research settings offering varying viewpoints on the most up-to-date information currently available on the uses and many benefits of Lactic Acid Bacteria.

Biochemistry

A Comprehensive Guide to Chemiluminescence
Luís Pinto da Silva (Centro de Investigación em Química, Departamento de Química e Bioquímica, Faculdade de Ciências da Universidade do Porto, Porto, Portugal)

In series: Chemistry Research and Applications
2019.
Hardcover: 978-1-53616-170-0. $230.00.

Chemiluminescence is a fascinating and mesmerizing phenomenon, which consists on the generation of light as the result of a chemical reaction. This process has been gaining attention in the last decades, being now a standard tool in analytical, bioimaging, biomedical and pharmaceutical applications. This book provides a detailed overview of the basic mechanisms and principles of the most relevant chemiluminescent systems, as well as describing the most recent advances and applications. Written by experts, this is a reference text suitable both for researchers focused on chemiluminescence and for those wanting to start working on this field. In Chapter One, the progress and evolution of the chemiluminescent studies in imidazopyrazinone-based compounds are reviewed, with emphasis on their potential as diagnosis tools. Chapter Two
addresses the spectral changes associated with firefly bioluminescence by focusing on the tautomeric equilibria of the light emitter. Chapter Three reviews, for the first time, the liquid-phase chemiluminescence of fullerene and derivatives. Chapter Four is devoted to studies of chemiluminescence with the participation of lanthanide ions. Chapter Five summarizes the mechanism behind the chemiluminescence of acridinium esters, while discussing their current applications. Chapter Six explains the potential of phenothiazine derivatives as enhancers in analytic chemiluminescent assays. Chapter Seven collects the available information of both well-known and lesser-known examples of squid bioluminescence. Chapter Eight discusses the enhancement of chemiluminescent emission by using metal-nanoparticles near a luminescent molecule, which is known as metal-enhanced chemiluminescence. In Chapter Nine it is explained how model molecules can make the study of complex bioluminescence reaction mechanisms accessible, as well as allowing for chemiluminescence on macroscopic molecular crystals. Chapter Ten describes experimental and computational approaches used for enhancing the thermostability of firefly luciferase. Chapter Eleven demonstrates the usefulness of theoretical studies for better understanding chemiluminescent reactions. Chapter Twelve describes the fundamental theoretical aspects of state-of-the-art multiconfigurational methods and shows illustrative examples of their application to the study of chemiluminescence. Finally, Chapter Thirteen discusses chemiluminescent experiments that are simple, inexpensive and can be performed by students.

**Advances in Polyamides Research**

*Nicolas Gomes Correia*


Softcover: 978-1-53615-804-5. $82.00.
e-book: 978-1-53615-805-2. $82.00.

The opening of Advances in Polyamides Research briefly explains some of the basic concepts in thermoplastic elastomer materials. Next, the authors deal with fundamental concepts in the field of polyamide and fullerene-based nanomaterials. The influence of moieties on the properties of polymers is discussed in the final chapter. The authors focus on finding a global relationship between sugar-based monomer structures and properties of polyamides based on a careful analysis of existing reports.

**Carboxymethyl Cellulose, Volume II: Pharmaceutical and Industrial Applications**

*Ibrahim H. Mondal* (Polymer and Textiles Research Lab, Department of Applied Chemistry and Chemical Engineering, Rajshahi University, Rajshahi, Bangladesh)


e-book: 978-1-53614-752-0. $230.00.

Carboxymethylcellulose (CMC), also known as cellulose gum, is manufactured by the chemical synthesis of naturally-derived cellulose with chloroacetic acid. The multifunctional aspects of this product make it favorable for use as a key intermediate or ingredient in several applications. Furthermore, CMC is incorporated as a binding, thickening, stabilizing, emulsifying, suspending, sizing and coating agent in various applications. Cellulose gum enhances the aesthetics of the finished product by imparting a smooth texture and modifies the viscosity of various foods and beverages, superabsorbent hydrogels (as in many personal care products), cosmetics and pharmaceuticals. Textiles, paper and board, oil and gas drilling, paints and adhesives, and soaps and detergents are other major applications in the global market. The present book thus covers a wide range of applications; hence, a great number of people, both academics and industrialists, may find topics of interest about CMC, as well as other cellulosics. Although there are many research publications, patents and reports on CMC, no books about it are yet available. The present book reviews some vital issues and topics on the latest scientific and technological advances in carboxymethylcellulose. This book will provide an essential source of information to readers, in the exploration of possible applications of CMC, and in the generation of new ideas for product development. The book is divided into two volumes: Carboxymethyl Cellulose: Volume I – Synthesis and Characterization, and Carboxymethyl Cellulose: Volume II – Pharmaceutical and Industrial Applications. The book contains a total of 32 entries on selected topics. Each chapter describes some specific issues and gives the current status of research and technology in the study of synthesis routes or design concepts, methods and fabrication strategies, characterization and applications of CMC products, as well as future prospects for research in the subject area. Highlights of this book include synthesis and formation mechanisms of CMC, structure property relationships, homogeneous and heterogeneous phase modification to create common and functional products, analysis and characterization, absorption and swelling mechanisms, stimuli-responsive and super-absorbency nature, and a wide range of multi-dimensional applications, including human consumption and uses.
Horseradish Peroxidase: Structure, Functions and Applications
Maarten Uzun
In series: Biochemistry Research Trends
2019. 188 pp.
Softcover: 978-1-53615-912-7. $95.00.
e-book: 978-1-53615-913-4. $95.00.

In this compilation, the authors discuss the commercial source for the enzyme horseradish peroxidase, the tuberous roots of the horseradish plant which is native to the temperate regions of the world. Horseradish peroxidase is an oxidoreductase belonging to the highly ubiquitous group of peroxidases, indicating that this enzyme came into existence in the early stages of evolution and has been conserved thereafter. Following this, the authors discuss the latest advancements and innovations in the field of enzymatic electrochemical sensors based on the electrical communication between horseradish peroxidase and the enzyme’s modified electrodes surfaces. In conclusion, the authors discuss the potential for horseradish peroxidase use in colored wastewater treatment. C. I. Acid Violet 109 was used as a model dye in order to examine the feasibility of horseradish peroxidase application in the removal of anthraquinone class of synthetic dyes. The reaction conditions were optimized in terms of dye, enzyme and H2O2 concentration as well as temperature and pH influence.

Peroxisome Proliferator-Activated Receptors (PPARs): Structure, Mechanisms of Action and Role in Health and Disease
Rodrigo Valenzuela (Nutrition Department, Faculty of Medicine, University of Chile, Casilla, Santiago, Chile)
In series: Biochemistry Research Trends
Hardcover: 978-1-53614-737-7. $230.00.

Worldwide, the prevalence of chronic diseases, such as obesity, diabetes, cardiovascular diseases, cancer, non-alcoholic fatty liver disease, inflammatory (autoimmune) and neurodegenerative diseases, has shown a sharp increase. In the last 20 years, developing countries and the young population have presented the largest augment in the incidence of these diseases, which evidences that they are not only limited to developed countries nor the adult population. These pathologies have in common a complex interaction between genetic, metabolic and environmental factors. In this context, several basic and clinical researches have demonstrated the relevance of the expression and activity of the peroxisomal proliferator-activated receptors (PPARs) as fundamental elements in the prevention and treatment of chronic diseases. PPARs are a family of transcription factors that control many cellular metabolic processes. PPAR isoform expression and activity is regulated in different tissues according to physiological processes (growth, development, and aging) and to pathological conditions (cardiovascular diseases, inflammatory diseases, neurodegenerative diseases, hepatic diseases, among others). Also, different compounds such as drugs (fibrates), nutrients (long-chain polyunsaturated fatty acids), and several natural bioactive compounds (polyphenols) are molecular regulators of PPARs expression and activity. Recent research has established the importance of the regulation of PPARs activity and their role in cell and tissue protection against injury (i.e., oxidative stress, inflammation, endoplasmic reticulum stress). This book is dedicated to reviewing the state of the art regarding PPARs regulation with an emphasis on molecular aspects underlying their effect in health and disease. Specifically, the participation of PPARs is discussed in insulin resistance, inflammation, NAFLD, DM2, cardiovascular disease, hypertension, obesity, gastrointestinal disease, and neurological health and disease. Moreover, this book reviews how different molecules regulate the expression and activity of PPARs. Finally, the scientific information presented in this book pretends to contribute to a greater understanding of PPAR role in the prevention and treatment of different pathologies and metabolic alterations.

Proteases: Functions, Mechanisms and Uses
Nelson Pérez Guerra (Department of Analytical and Food Chemistry, Food Science and Technology Faculty, University of Vigo, Ourense, Spain)
In series: Biochemistry Research Trends
Hardcover: 978-1-53615-854-0. $230.00.

Proteases or proteinases have a wide application in different industrial processes including cheese production, meat tenderization, production of protein hydrolysates, silver recovery and silk; in many other fields including biotechnological, baking, textiles, pharmaceutical and leather industries and also, as an additive to detergents and in bioremediation procedures. These enzymes are present in plants, animals and microorganisms (protozoa, bacteria, fungus and some types of algae and viruses). Considering the wide applications of these enzymes, it is necessary to know their
functions, origin (plants, animals, bacteria and fungus), classification and characteristics, action mechanisms, their specific target substrates and products obtained in the reactions that these enzymes catalyze, as well as their optimal temperature and pH of activity and stability. The book provides an overview of the latest knowledge about the functions and action mechanisms of proteases enzymes and their applications in different industrial fields. It addresses four important aspects: the main characteristics of proteases of different origins, the design of emerging technologies for production of novel proteases with enhanced specificity, stability and catalytic activity for a wide industrial application, utilization of proteases to produce functional foods and the use of protease inhibitors to control or block the activity of these enzymes for preventing diseases in humans and animals. It was felt necessary to include a chapter based on the use of bioinformatics resources (databases, tools, visualization and data analysis) to provide a better understanding of proteases and their functions at the molecular level. Although production and application of bacterial and fungal proteases have long been reported, little is known about the proteases produced by insects (mainly those economic and medically important species), organisms inhabiting marine environments and protozoa, their action mechanisms, properties and physiology. This knowledge is important for designing new strategies for herbivory insect control to avoid the transmission or development of pathogens in their corresponding entity hosts (in case of insect digestive proteases), or designing specific antiparasitic drugs to block the action of proteases and avoid colonization and imminent parasitism (in case of protozoa proteases). In addition, the knowledge about the integrity and function of marine proteases under extreme reaction conditions could facilitate their application in a wider processing conditions than the terrestrial proteases.

**Biotechnology**

**Recent Advances in Biotechnology**
Sanct J. Joshi and Geetha S. J. (Department of Biology, College of Science, Sultan Qaboos University, Oman)
In series: *Recent Trends in Biotechnology*
Hardcover: 978-1-53615-860-1. $230.00.

The biotechnology as we know today is the perfect amalgam of ‘Biology’ and its applications by utilizing advances in different fields such as engineering, physics, and mathematics/information technology. Recent advances and developments in areas such as nanotechnology, molecular biology and OMICS, synthetic-biology, and genetic engineering tools further pave the way to achieve different selective criteria and development of ‘tailor-made’ microbe-metabolites that can be effectively applied for different applications. The presence of biotechnology has reached beyond academics research in microorganisms, plants and animals to different ‘day-to-day’ applications in pharmaceuticals, cosmetics, green-nanotechnology, petroleum industry and environmental applications, to list a few. It is worth mentioning the impact of substantial academic and industrial research and developments in last decade on several attributes of different branches of biotechnology, especially in nanotechnology for health and enzyme research, environmental applications, applications of extremophiles, proteomics, uses of toxins, and many more remarkable fields. In the current book, researchers highlighted such emerging technological advances and their applications. The current book was compiled with the help of leading biotechnologists from the Middle East and India, with the objective of providing recent developments in global status and opportunities of biotechnology. This book will prove to be a useful and timely contribution to both academic and industrial researchers from diverse biological background all over the world.

**Research Advances in Plant Biotechnology**
Yaroslav Borysovyich Blume (Institute of Food Biotechnology and Genomics, National Academy of Science of Ukraine, Kyiv, Ukraine)
In series: *Plant Science Research and Practices*
2020.

In Research Advances in Plant Biotechnology the potential of high technological approaches in plant genetic engineering as well as their practical applications are considered. The efficiency of plant genetic transformation remains a challenge due to limitations of intracellular transportation of genes and other biomolecules through the cell wall, damaging of cells/tissues, gene disruption, and high-cost of application of the transformation methods. From stable interest to the development of new techniques for gene delivery into plant cells, key achievements of carbon nanotubes (CNTs) and fullerene derivatives to serve as vehicles for the delivery of genetic material into plant cells and plastids are discussed. Besides CNTs and fullerenes, the mineral nanoparticles (mesoporous silica NPs, metal oxide, calcium phosphate), and cationic polymers have been proposed also for plant transformation. In the monograph, the results of practical development of efficient gene transfer techniques based on using these nanomaterials and applicable for plants are presented, too. Then the multiple strategies of site-specific recombinases application in plant genetic engineering with outlining of prospective
directions of growth for this molecular tool are detailed. Currently, the CRISPR/Cas system is a powerful method for editing the genome of various organisms. The achievements and prospects of CRISPR/Cas usage for genome editing of fungi are considered in a separate chapter. Because salinity is one of major problems for modern agriculture around the world and creation of salt tolerant cultivars via conventional breeding cannot keep the pace with continuously rising food demand, one contribution to the book critically evaluates the possible roles or capacities of genes from different functional groups to improve plant salt tolerance via genetic engineering. Another chapter presents the results of systematic studies of the effects of new ecologically friendly polycomponent biostimulants of microbiological origin (developed in Ukraine on the basis of either 2,6-dimethylpyridine-N-oxide, or metabolic products of root endophyte fungus from the roots of ginseng, or metabolites of several strains of soil Streptomyces) on improving commercially useful traits in important agricultural crops, including improved growth, productivity and increased resistance to pathogenic fungi, parasitic nematodes and insects. Special attention is paid to the analysis of molecular-genetic mechanisms of the effect of microbial biostimulants at organismal, cellular, and molecular levels. The results of these studies proved that the mechanism of bioprotective effect of microbial biostimulants involves the delivery of RNA interference (RNAi) into plant cells, i.e. induction of synthesis of endogenous small regulatory si/miRNAs with immuno-protective, antipathogenic and antiparasitic properties. In the final chapter, the legal approaches to the regulation of plants produced through new breeding techniques such as gene editing are considered.

**Solid-State Cultivation of Grifola frondosa and Ganoderma lucidum: Technology, Research and Possibilities for Waste Utilization in Tropical Weathers**

*Sandra Montoya, Óscar J. Sánchez, and Diego F. Arias (Bioprocess and Argo-Industry Plant, Universidad de Caldas, Manizales, Colombia)*

In series: *Recent Trends in Biotechnology*

2020.


The worldwide market of medicinal mushrooms is constantly increasing considering the improvement of the level of life of population and the concerns for a healthy quality of life. The consumption of Macromycetes fungi as delicatessen food or nutraceuticals is increasing due to their gourmet features, nutritional characteristics and medicinal properties. The fruiting bodies of several fungal species contain different types of compounds that are valuable in the medical and cosmetic industry and have applications in other industrial sectors. However, the cultivation of Macromycetes is not fully disseminated at world level and just a few species are grown on a commercial scale (about 10 species). In particular, the demand of the Macromycetes Grifola frondosa (Maitake) and Ganoderma lucidum (Reishi) in different trade presentations is increasing because of their medicinal features and their applications in the pharmaceutical industry. Thus, research and development regarding the improvement of the cultivation parameters for these two fungal species have a paramount importance in order to reach a higher coverage in their industrialization. G. frondosa is a less-known and newer species in the mushroom industry. Its cultivation presents different levels of complexity and there are a few commercial facilities for its production. Likewise, G. lucidum, although more known than Maitake, exhibits significant complexity levels during its cultivation as well. In the present book, a comprehensive compilation of the developments achieved for improving the cultivation parameters of these two species in tropical weathers aimed at implementing them at industrial scale is provided. The book presents extensive research outcomes obtained by the authors not only at small scale, but also at pilot and industrial scales. The main markets for these two species are presented as well as the most promising residual feedstocks to be used for production of Reishi and Maitake fruiting bodies in the context of countries with tropical weather. The conventional procedures for solid-state cultivation at different production scales is analyzed and specific conditions for such production in tropical weathers are also discussed. In addition, a description of the potential biologically active compounds that could be extracted from these two fungal species is provided as well as main lignocellulolytic enzymes obtained from these mushrooms. This book is intended to researchers, graduate students, technologists, and entrepreneurs as well as private firms working in the medicinal mushroom industry.

**Botany**

**Germination: Types, Process and Effects**

*Rosalva Mora-Escobedo, PhD (National Polytechnic Institute, National School of Biological Sciences, Prol. Carpio y Plan de Ayala, Tomás, México), Cristina Martínez (Spanish National Research Council (CSIC), Madrid, Spain) and Rosalía Reynoso (Autonomous University of Querétaro, Mexico)*

In series: *Plant Science Research and Practices*

2019.


Germination: Types, Process and Effects is a book that brings together the contribution of new and relevant information from many experts in the fields of food and biological sciences, nutrition, and food engineering, to provide the reader with
the latest information of fundamental and applied research in the role of edible seeds and discuss the benefits of consuming them. In this book, you will find relevant information regarding origin and taxonomy of seeds, global markets, physicochemical composition and the effect of edible seeds germination on chronic degenerative diseases, such as obesity, diabetes, cancer, cardiovascular disease, inflammation and arthritis. This book will be of great interest to food scientist, biologists, nutritionists, and food engineers who are particularly interested in the process, changes and contribution of seed germination to food security.

**Micropropagation: Methods and Effects**  
Valdir Marcos Stefenon, Ph.D. (Nucleus of Molecular Ecology and Plant Micropropagation, Universidade Federal do Pampa, São Gabriel, RS, Brazil)  
In series: *Plant Science Research and Practices*  
Softcover: 978-1-53614-968-5. $82.00.  
e-book: 978-1-53614-969-2. $82.00.  
Plant micropropagation is one of the most classical and widespread biotechnological tools used around the world. Undoubtedly, this technique brought quite important advances to our knowledge about morphological, physiological and developmental patterns of plants, to the progress of genetic breeding and to the establishment of the genetic engineering, among others. This technique is based on the “in vitro farming” of plant fragments in an axenic environment, where all nutrients needed are kindly provided to the cultivated plant, which is maintained under controlled temperature and light-darkness periods. Although it can be considered an established technique, several advances have been integrated to the routines of micropropagation laboratories each year, incorporated to the productive sector and to the academy. In Micropropagation: Methods and Effects, the authors aimed to shortly present some of these advances, as well as practical results of using this biotechnology towards the conservation of plant genetic resources. In seven chapters, methods employed for the micropropagation of different plant species, from agricultural cultures to tree species of the Brazilian Atlantic Forest and advances in techniques for explants disinfection and for analysis of somata complexes, as well as the progresses related to the micropropagation of apple and the use of bioreactors are presented. The seven chapters of this book will contribute towards incorporating new ideas to the daily effort of each reader, reaching the basic requests of students, professors, researchers and even non-specialized readers.

**Cell Biology**

**Calmodulin: Structure, Mechanisms and Functions**  
Vahid Ohme  
In series: *Cell Biology Research Progress*  
Softcover: 978-1-53614-948-7. $82.00.  
e-book: 978-1-53614-949-4. $82.00.  
In Calmodulin: Structure, Mechanisms and Functions, the authors consider small and poorly-studied groups of plant calcium-dependent protein kinases that directly interact with calmodulin molecules. In plants, Ca2+ activates calmodulin-like domain kinases that do not require calmodulin or phospholipids. Thus these kinases differ from both CaMK and PKC families prevalent in mammalian cells. Next, various strategies of purification of recombinant proteins using CaM-based purification systems are reviewed and discussed. Protein purification is a crucial process in biotechnology industries and life science research laboratories. Amongst these purification strategies, affinity purification has garnered a lot of attention due to its higher speed and selectivity, leading to enhanced purity in fewer steps. In the closing chapter, the authors describe atomic-level structures of Ca2+-bound CaM (Ca2+/CaM) bound to the PSD-95 N-terminal domain. The N-lobe of CaM forms a cap that binds to the N-terminus of PSD-95 and sterically blocks the palmitoylation of PSD-95 at Cys5 and Cys9. The CaM-C-lobe forms hydrophobic contacts with PSD-95 residue Y12, and the Y12E mutation abolishes Ca2+-induced postsynaptic release of PSD-95.

**Extracellular Vesicles: Mechanisms and Role in Health and Disease**  
Juanita F. Lafon  
In series: *Cell Biology Research Progress*  
2020.  
Softcover: 978-1-53616-466-4. $82.00.  
e-book: 978-1-53616-467-1. $82.00.  
Extracellular vesicles are small vesicles (or membrane-bound organelles) that can be found in blood and other biofluids and their internal content and surface reflect their origin and potential function. Extracellular Vesicles: Mechanisms and Role in Health and Disease begins with a summary of the most recent findings about the potential role of extracellular
vesicles in human health and diseases and discusses future directions. The authors discuss how intercellular communication at the developing feto-maternal interface is of cardinal interest. The implantation itself is at least partially-dependent on extracellular vesicles' mediated processes. Furthermore, the altered local and systemic immunomodulatory state seems to be significantly influenced by proteomic and nucleic acid cargo found in extracellular vesicles. Lastly, recent studies in the development of metastatic potential are studied by focusing on the role of oxidative stress under the control of reprogrammed onco-metabolism using the LNCaP-C4-2B prostate cancer progression model system.

**Ecology**

**Recent Advances in Ecological Restoration**

*Kristian de Vlieger*


Softcover: 978-1-53616-554-8. $82.00.

e-book: 978-1-53616-555-5. $82.00.

In Rio Grande do Sul, Southern Brazil, there are hundreds of Eucalyptus forest farms for pulp production distributed in several municipalities. In these pulpwood production farms, a major forestry restoration project is underway for Permanent Preservation Areas, which have peculiarities that may favor or hinder restoration. In this compilation, in order to search for alternatives for the restoration of these Permanent Preservation Areas, the planting of seedlings of native species in nuclei is implemented and evaluated as an alternative technique to traditional reforestation with total area plantation. Suitable techniques for forest restoration in mined areas are also explored, with the goal of attaining environmental sustainability for the bauxite mining in the region. Thus, by monitoring of mined and restored areas, 146 native species of the Atlantic Forest were found, 61 in the planting of seedlings, 97 in the inventories for evaluation of these plantings and 92 in natural regeneration. The authors set out to elucidate the underlying processes modeled by diversity and community composition with respect to aboveground biomass during succession in an Amazon forest in order to devise better passive restoration plans. 45 20m × 50m (1000 m2) plots were sampled across three sites in secondary forests, having different stand ages after shifting cultivation, and an old-growth forest located in the Northern Amazon forest, Venezuela. The concluding study discusses how, due to the environmental heterogeneity conditions, active restoration measures are fundamental in degraded areas where natural regeneration is limited, mainly due to the absence of fragments in the landscape. Finally, it is emphasized that passive restoration is playing an important role in the ecosystem services recovery at local-scale.

**Evolution**

**Mechanisms of Evolution**

*Börje Ekstig (Uppsala University, Börje Ekstig, Uppsala, Sweden)*


Our planet is crowded with a spectacular diversity of living creatures. As a most peculiar fact, the oldest of these are in general the most primitive whereas the most recent are the most advanced. This counterintuitive observation raises the question of the direction of evolution. Is it proceeding progressively and, if so, how can such a direction be compatible with natural selection? A central feature of the evolutionary process has come about as a result of continuous modifications of individual developmental programs. The author of this book has made the original discovery that there is a temporal correlation between the processes of development and evolution. The analysis of this correlation has led to several fresh ideas of the mechanisms of evolution embracing biological as well as human cultural evolution; ideas that have initiated an analysis of evolution discussed at length in this book. The author suggests an operational definition of the concept of complexity and a method by means of which it can be measured. The analysis of complexity has led to the notion of the evolutionary process characterized progressively though stepwise increasing complexity all over its biological and human cultural manifestations. A general conclusion proposed by many theorists is that adaptive natural selection is unable to explain the progressive evolution of life. However, the present author has introduced an alternative selection mechanism that works independently of environmental conditions. Within this frame of explanation, the concept of progress is promoted. In this book, we embark on an innovative, exploratory and interdisciplinary adventure, step by step following the author towards his quest of investigating evolution, its mechanisms.
Aflatoxins and Wildlife: Exposure, Problems, Detection and Control Methods
Scott E. Henke, Ph.D., and Alan Fedynich, Ph.D. (Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville, Kingsville, TX, US)
In series: Animal Science, Issues and Research
Hardcover: 978-1-53614-578-6. $195.00.
Aflatoxins are a highly toxic group of secondary metabolites that are produced by soil fungi, especially Aspergillus spp. fungi. The fungi infect cereal grain crops including corn, wheat, cotton, peanuts, and various other nuts. Aflatoxins cause serious health concerns because they are known carcinogens, mutagens, teratogens, and immunosuppressive agents. Therefore, limits are in place by the U.S. Food and Drug Administration regarding how much aflatoxin can occur in cereal grain that will be consumed by humans and livestock within the human food chain. Such limits are even stricter in Europe than in the United States. Therefore, aflatoxins, when present in cereal grains, contribute to major economic losses in these commodities. However, to date in the United States, aflatoxin concentrations are not restricted within cereal grain provided to wildlife. Various wildlife agencies and organizations recommend limits in aflatoxin concentrations, but these are only recommendations and not mandated by law. Therefore, grain condemned for human consumption can be marketed as feed for wildlife. Unfortunately, wild animals bear the same health concerns as humans when it comes to aflatoxin exposure. Aflatoxins in Wildlife is a compilation of research concerning the effects of aflatoxin exposure to wildlife by researchers of the Caesar Kleberg Wildlife Research Institute at Texas A&M University-Kingsville. This volume contains sixteen chapters, beginning with a review of aflatoxin, what it is, how it functions in the environment, and its known effects on various species (Chapter One and Two). The book then discusses the potential exposure of wildlife to aflatoxins (Chapter Three), and the prevalence of aflatoxins in feed provided to wildlife (Chapters Four–Six). Chapters Seven–Ten focus on specific effects that aflatoxins have on the physiology of wildlife species, mainly birds, while Chapters Eleven and Twelve research the recovery time needed after aflatoxin exposure and the ability of species to detect aflatoxin within feed. Chapter Thirteen specifically addresses the effects of aflatoxin exposure in wild mammals. The remainder of the book (Chapters Fourteen–Sixteen) focus on testing feed for aflatoxin and how a person can reduce the risk of providing aflatoxin-contaminated grain to wildlife. Aflatoxins in Wildlife is an essential addition to the library of vertebrate and environmental toxicologists, zoonotic disease specialists, veterinary health care professionals, and wildlife biologists. Scott E. Henke is a wildlife research scientist with the Caesar Kleberg Wildlife Research Institute and a Regents Professor and Chair within the Department of Animal, Rangeland and Wildlife Sciences with Texas A&M University-Kingsville. Dr. Henke has >150 publications in scientific journals and also is co-Editor of the books Becoming a Wildlife Professional and American Alligators: Habitats, Behaviors, and Threats. Alan M. Fedynich is a wildlife research scientist with the Caesar Kleberg Wildlife Research Institute and a Professor within the Department of Animal, Rangeland and Wildlife Sciences with Texas A&M University-Kingsville. Dr. Fedynich has authored/coauthored >70 articles published in peer-reviewed scientific journals. The two researchers have collaborated on numerous zoonotic disease and parasite projects.

The Origin of Species by Means of Natural Selection. 6th Edition
Charles Darwin, M.A., F.R.S
In series: Science, Evolution and Creationism
Hardcover: 978-1-53614-939-5. $350.00.
The Origin of Species by Means of Natural Selection, published in 1859 sold out on its first day. It is considered to be the foundation of evolutionary biology and is based on Darwin’s experiences while onboard the H. M. S. Beagle. The sixth edition is often considered the definitive work and contains many additions and corrections to the original book.

Genetics and Genomics

Acetylcholine Receptors in Health and Disease
Adelais Eros Gupta
In series: Genetics - Research and Issues
Softcover: 978-1-53615-447-4. $82.00.
e-book: 978-1-53615-448-1. $82.00.
Acetylcholine Receptors in Health and Disease opens with a review of the results of an investigation on the cholinergic modulation of excitatory synaptic transmission in the frog tectum carried out in the laboratory of neurophysiology at the Lithuanian University of Health Sciences. Experiments were done in vivo on the common grass frog Rana temporaria. Next, the authors review the function of M4 MR and discuss possible detection methods. M4 MR regulated locomotion is studied in conjunction with recent data on consequences to biohythms. In the closing chapter, the authors review the environmental enrichment paradigm in rodents, as well as their effects on neurobiological, physiological and behavioral variables in preclinical studies.

DNA: Background, Laws and Backlog of Evidence
Tomáš Koláček
In series: Genetics - Research and Issues
Hardcover: 978-1-53616-117-5. $160.00.
Deoxyribonucleic acid, or DNA, is the fundamental building block for an individual’s entire genetic makeup. DNA is a powerful tool for law enforcement investigations because each person’s DNA is different from that of every other individual (except for identical twins). As early as the 1980s, states began enacting laws that required the collection of DNA samples from offenders convicted of certain sexual and other violent crimes. Chapter 1 provides an overview of how DNA is used to investigate crimes and help protect the innocent. Chapters 2 and 3 report on the establishment of a system for integration of Rapid DNA instruments for use by law enforcement to reduce violent crime and reduce the current DNA analysis backlog. Chapter 4 examines what is known about the amount of backlogged DNA evidence at state and local government labs; the extent to which OJP measures CEBR grant performance; and the extent to which OJP has designed controls to identify conflicts of interest related to CEBR grants. Chapter 5 reviews the level of crime scene DNA evidence backlogs among CEBR grantees and the factors that contribute to such backlogs; the extent to which DOJ has clearly defined goals for CEBR; and the extent to which OJP has controls for CEBR related to federal conflicts of interest and lobbying requirements. In 2016, about 323,000 individuals age 12 or older were reported victims of sexual assault, according to the Bureau of Justice Statistics. Studies have shown that exams performed by sexual assault forensic examiners—medical providers trained in collecting and preserving forensic evidence—may result in better physical and mental health care for victims, better evidence collection, and higher prosecution rates. Chapter 6 describes what was known in 2016 about the availability of sexual assault forensic examiners nationally and in selected states and the challenges selected states faced in maintaining a supply of sexual assault forensic examiners.

Encyclopedia of Genetics: New Research (8 Volume Set)
Heidi Carlson
In series: Genetics - Research and Issues
Hardcover: 978-1-53614-451-2. $1380.00.
This 8 volume encyclopedia set presents important research on genetics. Some of the topics discussed herein include the speciation of Arabian gazelles, tau alternative splicing in Alzheimer’s disease, Cornelia de Lange syndrome and autosomal dominant polycystic kidney disease.

Gene Delivery: Methods and Applications
Vanessa Zimmer
In series: Biochemistry and Molecular Biology in the Post Genomic Era
2019.
Sofcover: 978-1-53616-268-4. $95.00.
e-book: 978-1-53616-295-0. $95.00.
Gene Delivery: Methods and Applications provides a comprehensive overview on viral and non-viral methods used to genetically engineer human mesenchymal stromal cells. In addition, an update on ongoing and completed clinical studies with engineered mesenchymal stromal cells will be provided, as well as a snapshot of the advances and technical challenges yet to be addressed. Next, a variety of gene delivery systems including physical transfection techniques, virus-based delivery vectors, chemically engineered delivery systems and bio-inspired vehicles are reviewed and their strengths, shortcomings and biomedical applications are discussed. Selfish DNA called transposons capable of cutting out and pasting into the host genome are active throughout the phylogenetic kingdoms. Researchers have repurposed natural transposons for use in delivering a gene-of-interest, enabling for the study of a large and growing list of preclinical gene therapy applications. As such, the authors discuss the past achievements and future challenges of this early-stage technology. The closing chapter introduces cell-penetrating peptides as an efficient tool for DNA transfection. HR9, a designed cell-penetrating peptides, containing nona-arginine flanked by cysteine and penta-histidine displayed a high penetrating ability in mammalian cells.
The CRISPR/Cas9 System: Applications and Technology
Alfred A. Bertelsen
In series: Biochemistry and Molecular Biology in the Post Genomic Era
Softcover: 978-1-53616-426-8. $95.00.
e-book: 978-1-53616-427-5. $95.00.
This compilation focuses on the CRISPR/Cas9 system, a genome editing tool that has been hailed as the most profound molecular biology discovery in the past decade. By employing the natural process of bacterial immunity towards bacteriophages, the tool allows researchers to precisely excise and edit parts of the genetic sequence to modify them. The authors summarize the molecular pathogenesis of hepatocellular carcinoma, available treatments/drugs and their limitations, the landscape of CRISPR targeting hepatocellular carcinoma, limitations and potential targets in future. The closing review summarises the use of CRISPR/Cas9 gene editing in ophthalmology and focuses on the advancement of gene editing in the cornea. The majority of corneal dystrophies are the result an autosomal dominant inheritance pattern within the TGFBI gene, which presents an ideal model suited for a CRISPR/Cas9 knock out methodology.

Marine Biology

Advances in Marine Biology, Volume 4
Adam Kovács and Patrik Nagy
In series: Advances in Marine Biology
Hardcover: 978-1-53615-042-1. $250.00.
The opening chapter describes the characteristics, challenges and opportunities pertaining to the Strait of Hormuz and reviews the present and future conditions of the marine environment in the region. Next, the authors analyze phytoplankton chlorophyll-a data obtained on 27 oceanographic cruises in the southern Gulf of Mexico between 1979 and 2000. Four cruises were selected to report variations of chlorophyll-a associated with hydrographic conditions (temperature and salinity) in surface waters, one in April 1983 and three in different seasons in 1987. Data on the abundances of >105 cells/L of the non-toxic benthic-planktonic widely distributed ubiquitous pennate diatom Cylindrotheca closterium as a causative agent of harmful algal blooms in the coastal waters of the northern Yucatan Peninsula, with an emphasis on four marinas, are presented in the following chapter. Following this, studies are presented wherein it is shown that substrate type, species diversity, stem and root density, predator, seasons, and mate display activity affect the zonal and spatial distribution as well as the diameter of a burrow in semi-terrestrial crabs. The authors go on to highlight the applications of the most active compounds present in marine macroalgae known as polyphenols, as well as their isolation using green extraction methods. Their bioactive properties are reviewed and their potential for health improvement is evaluated. The penultimate chapter focuses on tributyltin, a toxic compound with broad-spectrum activity toward diverse marine species, and how it effects marine environments. The closing chapter examines the several molecular methods which have been evaluated for species identification, phylogenetic analyses, and determining the population structure of Thunus.

Cetaceans: Evolution, Behavior and Conservation
Daniel Patón Domínguez, Ph.D. (Ecology Unit. Faculty of Sciences. University of Extremadura (Spain). Avda. Badajoz, Spain)
In series: Marine Science and Technology
Softcover: 978-1-53614-998-2. $95.00.
e-book: 978-1-53615-156-5. $95.00.
Cetaceans are one of the most unknown groups in the animal kingdom. Their study is very difficult due to their scarcity, their flighty behavior, and their enormous displacements. In addition, some species feed in very deep waters and only emerge to breathe, or they live in hard to reach areas. However, few animals create so much wonder. What child or adult has not felt emotions when contemplating the spectacles of the killer whales, the pirouettes of the dolphins, or the immensity of the whales in the middle of the sea? Some of the authors of this book have been so moved to be surrounded by a group of fin whales that could not contain their tears. It is a difficult sensation to explain. One could try to summarize it by saying that these immense animals exhaled peace. Seeing dolphins making capers around a boat or a group of fin whales suddenly emerging a few meters away is one of the greatest shows we can see in nature. In the presence of these animals, there is only a feeling of recollection. These are the moments when we see how small we humans are in this wonderful biosphere. Therefore, this book is a small tribute to these beautiful living beings. Something we owe them. We have to protect these animals, but we cannot do so without knowing them. In this text, the authors provide key information to understand the evolution of cetaceans, their patterns of movement and behavior, always under a conservation perspective. This book has been written by 15 leading specialists from three different countries and with different backgrounds ranging from biology to veterinary
science. They are united by a common interest, a passion. The book does not focus on a single species, but covers studies with dolphins, sperm whales, and fin whales, as well as various methodological approaches that provide key data to understand the evolution of up to 50 different species. Many diverse aspects have been covered and, above all, new methodological approaches have been provided in areas such as acoustics, the study of spatial and feeding behavior, evolution, social interactions, and even blue economics. As if this were not enough, the authors wish to highlight the immense amount of data that has been used. The first chapter on fin whales is based on hundreds of sightings over several years, and dozens of satellite images on various environmental parameters. Chapter two covers hundreds of recordings of the sounds of humpback whales around the world. Chapter three has followed the sperm whale populations of the Strait of Gibraltar over several years with hundreds of sightings. Chapters four and five study the evolution of more than fifty species through hundreds of recordings using qualitative and quantitative approaches, respectively. The sixth chapter compares the behavior of two species of dolphins. Finally, chapter seven designs a new line of study for these animals: the blue economy.

**Lobsters: Biology, Behavior and Management**

*Brady K. Quinn (Department of Biological Sciences, University of New Brunswick, Saint John, NB, Canada)*

In series: *Marine and Freshwater Biology*


Softcover: 978-1-53615-711-6. $95.00.


Lobsters are marine decapod crustaceans belonging to a diverse array of taxa, many of which support major fisheries of great socioeconomic importance to human communities and play important roles in natural ecosystems. This book contains chapters describing studies of the larval biology, behavior and habitat preferences, and fisheries management of fished clawed and spiny lobster species. Chapter 1 attempted to use a model based on enzyme thermodynamics to estimate and compare the lower and upper threshold temperatures and intrinsic optimum temperature for the development of American lobster larvae. Chapter 2 used an inferential ecomorphological approach incorporating information on the morphology, life history, biotope, and behavior of a selection of 11 decapod species present in European waters to predict the likely natural habitat of small juvenile European lobsters, a critical life stage about which, remarkably, little is known. Chapter 3 used simulation modeling to estimate the impacts of different fisheries harvesting strategies on the catches and socioeconomic values of Caribbean spiny lobster fisheries in different nations, illustrating their sensitivity to heterogeneous fisheries management. These chapters demonstrate new approaches to the study of lobsters that can contribute important information on their biology and fisheries ecology for use in forecasting the potential impacts of changes in climate and fisheries management on their populations and the fisheries they support.

**Valorising Seaweed By-Products**

*María Dolores Torres Pérez (Department of Chemical Engineering, University of Vigo, Campus Ourense, Edificio Politécnico, As Lagoas, Ourense, Spain) and Herminia Domínguez González (Department of Chemical Engineering, University of Vigo, Campus Ourense, Edificio Politécnico, As Lagoas, Ourense, Spain)*

In series: *Marine and Freshwater Biology*


Valorising Seaweed By-Products is a book that has been divided into 9 chapters, including information on the recovery of highly valuable compounds for microalgae. The authors of this volume discuss seaweed as a renewable and globally available feedstock with potential applications in the food and feed industries, as well as the agricultural, chemical, or pharmaceutical fields. The chapters include discussions on a wide range of topics including an overview of seaweed by-products, Algae and microalgae biorefineries, the potential use of seaweed by-products in various products and materials, color stability, and pigment contents of powdered laver (Pyropia yezoensis). The text also includes the interactions of the algae Sargassum muticum with metals as a starting point for the valorisation of invasive seaweed species, as well as new insights into the nutrition and functionality of seaweed. Microalgae biomass as an ingredient to design added value in food products, as well as seaweed biomass for bioremediation or Ethanol creation are additional topics.
Microbiology

Encyclopedia of Microbiology (11 Volume Set)
Eva Maldonado
In series: Microbiology Research Advances
2019.
This 11 volume set covers a wide range of topics, including: · Klebsiella pneumoniae · endophytic bacteria · infra-red spectroscopy · probiotics · soil heterogeneity · organic pollutants.

Enter the World of Microbiology: Interviews about the World’s Most Famous Microbiologists
Manuel Varela and Michael F. Shaughnessy
In series: Microbiology Research Advances
Enter the world of microbiology: A dimension not only of viruses and bacteria, but also of contributions to medicine, health, and well-being. Enter the world of the most famous discoveries of scientists in the realm of biology from all over the world. Learn about their lives and the discoveries that have revolutionized science and the field of microbiology. These are the geniuses that have given the human race so much to improve the health of all mankind.

Lipid Bilayers: Properties, Behavior and Interactions
Mohammad Ashrafuzzaman (Department of Biochemistry, King Saud University, Riyadh, Kingdom of Saudi Arabia)
In series: Cell Biology Research Progress
2019.
Hardcover: 978-1-53616-392-6. $160.00.
The book ‘Lipid Bilayers: Properties, Behavior and Interactions’ provides a broad overview of an important biological system ‘cell membrane’. The cell is the powerhouse where processes of life are controlled. Cell membranes consist of lipid bilayers that make biological boundaries. The bilayer participates in determining most of the cell-based uptakes of materials, exchanging of information between both sides and ensuring helping vital biological processes to continue. We have focused specifically on an understanding of various aspects of lipid membrane bilayers. The book is focused on a detailed description of the diverse mechanisms and phenomena associated with membranes. Lipid bilayers exist in various parts of the cell, namely, across the plasma membrane, mitochondrial membrane, and nuclear membrane. While exploring lipid bilayers we shall, therefore, need to consider structures and functions of various sections of biological cells. Besides spectroscopic observations and electrical measurements of membrane bilayers, we address here the phenomena of coexistence and independent existence of different membrane components using various theoretical and experimental methodologies popularly used in biology, physics, mathematics, chemistry, biomedical engineering, and general medical sciences. The focus has been made on explaining diverse mechanisms that play crucial roles in molecular level in the construction of lipid bilayers and maintaining the relevant biological functions. This book will be helpful for readers who want to understand biological processes by applying both simple observations and fundamental scientific analysis. It provides a deep understanding of the causes and effects of molecular processes inside lipid bilayer membranes. A group of eminent scientists from around the globe contributed chapters focusing on different aspects. Each chapter may be found to present an individual topic and elaborate on a specific problem. But the chapters altogether have covered most of the basic aspects relevant to the title of the book. The book will be a vital reference for scientific understanding of lipid bilayers.
This book comprises a total of fourteen chapters contributed by experts from different countries across the globe. The book is divided into five sections containing two to three chapters each. It is a comprehensive collection of articles that give an overview of microbial catalysts which include enzymes that contribute to many fields and are widely used in industrial products. Microorganisms have served and continue to serve as one of the largest and most useful sources of many enzymes used in foods and the food industry. Microbial catalysts are environmentally friendly and consume lower energy. A particular focus of this book is on applied and industrial microbiology, agricultural microbiology, and food microbiology. All of the sections discuss microbial catalysts, enzymes with respect to their function and their benefits to humankind in general, and biotechnology as a subject of which enzymology is an integral part. This book deals also with the structure and function of some microbial enzymes. Microbial catalysts are generally preferred than plants and animals as sources of industrial enzymes because their production cost is low. In addition, their enzyme content is more predictable and controllable, and more so because of the easy availability of raw materials with constant composition for their cultivation.

This book comprises a total of 14 chapters contributed by experts from different countries worldwide. It is a comprehensive collection of articles to illustrate an overview of microbial catalysts that include enzymes widely contribute to many fields infood and industrial products. Microorganisms have served and continue to serve as one of the largest and most useful sources of many enzymes used in foods and the food industry. Microbial catalysts are environmentally friendly and consume lower energy. A particular aim of this book is focused on applied and industrial microbiology, agricultural microbiology, and food microbiology. All sections discuss microbial catalysts viz., enzymes with respect to their function and its benefit to human kind especially, and to biotechnology as a subject of which enzymology is an integral part. The book also deals with the structure and function of some microbial enzymes. Microbial catalysts are generally preferred than plant and animal as sources of industrial enzymes because their production cost is low. In addition, enzymes are more predictable and controllable, and more so because of the easy availability of raw materials with constant composition for their cultivation.
Plant Growth Promoting Microorganisms: Microbial Resources for Enhanced Agricultural Productivity

Niranjan S. Raj (Department of Studies in Microbiology, Karnataka State Open University, Muktahangothri, Mysuru, India) and A. C. Udayashankar (Department of Studies in Biotechnology, University of Mysore, Manasagangotri, Mysore, India)

In series: Microbiology Research Advances

Hardcover: 978-1-53615-776-5. $230.00.

Plant growth promoting microorganisms (PGPM) have gained acceptance and importance due to their dual benefits of promoting plant growth in addition to managing plant pests and diseases and are extensively used as microbial inoculants in improving agricultural productivity. Use of PGPM mixtures and their integration with other means, like host resistance and chemicals, has proven to be more useful in management of several disease problems. Successful greenhouse and field demonstrations have been done using PGPM for growth promotion and resistance induction in various crops, against a broad spectrum of pathogens. Practical use of PGPM-based products has advanced and many formulations are made available in commercial scale, and more are currently under development. Further, novel formulation technologies have been formulated. Microorganisms constitute the major players in the rhizosphere and their composition and biomass significantly alters the plants response to the environment. Composition and interaction of rhizomicroflora with its surroundings highly influences plant health and productivity. Such beneficial rhizo-ecosystems engineering and manipulation of the rhizosphere to exploit or enhance this innate genetic potential, which will most probably play a key role in the future development of sustainable agricultural processes, is also reviewed. In recent years, a substantial amount of work has been done in the area of PGPM and voluminous literature is available. This book presents a methodical, comprehensive and latest research survey in this area. An overview of the scale and impact of PGPM in plant growth promotion and management of crop diseases, focusing attention on details most relevant to the development and application of biological control strategies involving various microbial strains is discussed. Problems and prospects of commercialization, advantages and disadvantages of their use and their potential for integrated pest management are also outlined. Most of the available books either refer to the subject of plant growth promoting fungi or plant growth promoting bacteria, however, this comprehensive book includes research pertaining to all beneficial microorganisms that are plant growth promoting in nature. Moreover, this is a rapidly developing field of research and has global impact. Therefore, keeping in pace with the latest developments in this area is totally necessary, and this book will be a latest and up-to-date compilation of the research from different parts of the world.

Special Topics

A Comprehensive Guide to Aptamers

Tom Shuster

In series: Life Sciences Research and Development
2019, 166 pp.
Softcover: 978-1-53616-293-6. $95.00.

This collection opens with a focus on recent advancements on the development of nucleic acid aptamers as alternative delivery systems for therapeutic oligonucleotides. Additionally, key examples of targeted delivery of the most common nucleic acid therapeutics, including small interfering RNAs, short hairpin RNAs, microRNAs and antisense oligonucleotides for a number of disorders are discussed. The following chapter deals with in vivo studies that were conducted with radiopharmaceuticals based on aptamers, the radionuclides used, the radionlabeling strategies, the chemical modifications of interest to improve their properties, and the main aptamers advantages and drawbacks for application as radiopharmaceuticals. In conclusion, the authors discuss the perspectives of using aptamers in various detection methods, their advantages and disadvantages, and the results of such work carried out through the present day.

Bird Biographies

Author: Alice E. Ball
Illustrator: Robert Bruce Horsfall

In series: Birds - Evolution, Behavior and Ecology
2020.

Hardcover: 978-1-53616-460-2. $160.00.

The purpose of this book is to give, not only a portrait and a description of the birds, but a summing up of the beneficial and injurious habits of each, gained from the highest authorities obtainable. The book is intended for those who long to
Innovations in Life Science Research

Rajeshwar P. Sinha (Laboratory of Photobiology and Molecular Microbiology, Centre of Advanced Study in Botany, Banaras Hindu University, Varanasi, India Centre of Advanced Study in Botany, Banaras Hindu University, Varanasi, India), Shashi Pandey-Rai (Centre of Advanced Study in Botany, Banaras Hindu University, Varanasi, India) and Nandita Ghoshal (Centre of Advanced Study in Botany, Banaras Hindu University, Varanasi, India)

In series: Life Sciences Research and Development


At any given moment, a number of innovations in life science research occurs. There has always been an ever-increasing demand for the interdisciplinary research in life science to solve the problems of mankind. It is a challenging task to bring the fruits of laboratory level research to the commercial level for the welfare of humans. This book is an attempt to keep abreast with the recent innovations made in various fields of life science research. The book encompasses topics ranging from prokaryotic microscopic organisms to eukaryotic higher plants, distributed in fifteen chapters for the benefit of graduate and postgraduate students as well as young researchers, scientists and professionals. The book deals with topics pertaining to natural sunscreens, secondary metabolites, genome editing, molecular markers, stress biology, crop improvement, herbal medicines, plant diseases, genetic engineering, biotechnology and aspects related to ecology. This book imparts the latest innovations and knowledge in the specific fields of life sciences. In addition, it also provides details of newer and state-of-the-art technology/tools employed in achieving the potential of microbes and higher plants to make products that can be readily available for the welfare of humans. An insight for future perspectives has also been provided that makes this book highly useful and a must-read for students, researchers and professionals working in the field of microbiology, botany, biotechnology, agriculture, molecular biology, photobiology, ecology and other streams of life sciences.

Mosquitos: Species, Distribution and Disease

Tabitha Terry

In series: Insects and Other Terrestrial Arthropods: Biology, Chemistry and Behavior


Mosquitos: Species, Distribution and Disease opens with a discussion on the potential use of plant-derived saponins as a natural larvicide to help prevent and control disease outbreaks in mosquito-infested areas. The general background of saponins, examples of saponin-containing plants and the uses of crude saponins are furthermore discussed. The authors develop practical perspectives on controlling tropical disease vectors in an eco-friendly manner. The authors also provide updated lists of the mosquito species present in the eastern states of the Arabian Peninsula, with information on their collection sites and distribution. New records of some adults are published for the first time from Qatar. An investigation of the morbidity of epidemic vector-borne diseases is also considered. Intracellular population dynamics of viruses under a set of biologically sound parameter values are studied, and statistical tools are used to quantify the estimability of model parameters under distinct scenarios. The resulting mathematical model can also be applied in clinical settings where there is a growing body of work on the within-host dissemination of flaviviruses.

Zoology

Advances in Animal Science and Zoology. Volume 13

Owen P. Jenkins

In series: Advances in Animal Science and Zoology

Hardcover: 978-1-53616-048-2, $250.00.
e-book: 978-1-53616-049-9, $250.00.

The opening chapter of Advances in Animal Science and Zoology. Volume 13 reviews the parasite morphology, genetic variability, transmission dynamics in both intermediate and definitive hosts and the parasite-host relationship, emphasizing the metabolic and physiologic alterations in hosts of Angiostrongylus cantonensis. In the second chapter, nematode biology is examined in the context of understanding the infective juveniles persistence, distribution, and effect on insect populations. Potential entomopathogenic nematodes species are identified by distribution, survival, persistence, infectivity...
of wide host range. Continuing, the authors attempt to explain how Rocky Mountain elk, generally are considered a northern montane ungulate, survive in the Oscura Mountains, a Chihuahuan Desert range located in south-central New Mexico, US. Additionally, this compilation discusses how the effect of predation on ungulates remains contentious, at least in part due to a lack appreciation for the importance of local environmental conditions on predator-prey relationships. The authors study insect pollinators’ status of Talbotiella gentii for five years, focusing on the flowers of the trees in five locations, determining that there were no animal pollinators present. This is a major threat and could lead to the extinction of the species. The next section proposes that despite the industrialization of Rourkela, the butterfly diversity at the National Institute of Technology (NIT) campus is not very affected. Moreover, it suggests the need for taking up conservation measures to sustain the butterfly faunal diversity of the NIT campus. Subsequently, catfish are examined due to their potential influence on aquatic ecosystems. The catfish population can dispose of up to 26% of the total fish biomass, therefore it plays an important role in the biomanipulation of many freshwater systems. Methods for capturing catfish are also evaluated. It is determined that the most effective method is the use of long-lines simulating angling with a supporting buoy, as it predominantly results in the fish being caught alive. Only a low mortality rate is connected with the method of long-lines in comparison to other methods. The authors discuss European catfish, a large species with only a few competitors likely to be apparent in any locality. Moreover, the additional threat of hybridization between the invasive European catfish and closely related native species is explored. The author’s attempt to predict the forage potential in three forest tree species based on tree species and size, focusing on species commonly consumed by red deer, namely aspen, goat willow, and rowan. The final chapter presents various types of snakes by geography and clinical manifestations according to known venom toxins, thus allowing clinicians to treat the patient even when specific identification is not possible.

Advances in Animal Science and Zoology, Volume 14

Owen P. Jenkins

In series: Advances in Animal Science and Zoology
2020.
Hardcover: 978-1-53616-489-3. $250.00.

Advances in Animal Science and Zoology. Volume 14 first explores progress in drone-based research methods applied to animal ecology, in terms of applications to the field study of large birds of prey. Drone-based research methods have evolved out of the larger technology field of geomatics and are entwined with developments in GPS and biotelemetry, which enable accurate location recording, image capture and specimen behavioral assessment. Next, the authors discuss how our understanding of the reproductive physiology of male honey bees has advanced due to improved breeding techniques in apiculture, especially artificial insemination. A bioindicator is an organism sensitive to environmental changes and, therefore, its absence or scarcity indicates that there is some factor that is modifying the normal conditions of the environment. In one study, the authors explore the way in which amphibians are excellent bioindicators. Mitochondria-rich cells are integral component of the heterocellular amphibian skin epithelium and common to all species, participating in Cl- conductance and H+ secretion. As such, a graphic cell model is used to describe the Cl- conductance pathway based on the available data. The molecular basis of this complex pathway remains to be explored. Four species of closely-related iguanian lizards coexist along the length of the pampaean coastal sand dunes of Argentina in assemblages with different combinations that vary from two to four species, according to the locality. The authors examine community organization and species coexistence of these assemblages at two scales: local and regional. The lizard endemic in the Coachella Valley, a region including cities aiming to benefit from a burgeoning second home-golf resort market, is explored. The entire range of the Coachella Valley fringe-toed lizard (Uma inornata), was restricted to a 33,500 ha sand dune system that occupied the center of the valley. By 1980 over 95% of that sand dune system was developed or fragmented into parcels too small to sustain the lizard populations. The penultimate chapter reviews a number of factors that impinge on shoal-mate choice in fish, including body coloration and pattern, body size, shoal size, sex, behavior, and background coloration. The objective of the concluding work is to compare the size of the right and leftbulls of the Tursiops truncates, as well as between males and females. Six morphometric measurements of eight organisms were obtained and a student t was applied for comparison with a significance of p <0.05.

Biodiversity of the Bulgarian-Romanian Section of the Lower Danube

Peter Stanislavov Shurulinkov, PhD, Zdravko Hubenov, PhD,
Stoyan Beshkov, PhD and Georgi Popgeorgiev, PhD (National Museum of Natural History, Bulgarian Academy of Sciences, Sofia, Bulgaria)

In series: Animal Science, Issues and Research

The Danube River is the second longest river in Europe; it flows through ten countries and is 2,850 km in length. In its lower stretches it passes through large lowlands and remains an almost intact natural ecosystem. For 470 km, the river acts as a border
between Bulgaria and Romania and provides a refuge for very rich, yet insufficiently studied, biodiversity. The flora and fauna of this area, not far from the Danube Delta biosphere reserve, and its environmental importance are the topics of this book. The book is comprised of 12 separate scientific articles (chapters) that each contain specialized information about key organism groups forming the typical Lower Danube ecosystem. Vertebrate fauna of the study region includes 392 species out of which 83 species are fishes, 19 are amphibians, 15 are reptiles, 201 are birds, and 74 are mammals. Birds are presented in three separate articles with a focus on heron colonies, water birds in the marshlands, and diurnal raptors. Among the invertebrates, several key groups which are comparatively well-studied, are presented, including mollusks; dragonflies and damselflies (in overall 52 species); dipterans of suborder Nematocera (153 species); mayflies (52 species); stoneflies (3 species); and caddisflies (49 species), butterflies (153 species). An article about habitats and typical plants of the Danube plain is also included. The articles all contain information on the status, distribution and ecology of the study’s organism groups, and the threats they face. Overall numbers and population trends of some of the presented taxa are also included; 281 maps, 29 graphs, 21 tables and 49 photographs help illustrate various aspects of the collected data. The authors of the articles are well-known and experienced experts on specific organism groups, working mainly out of two institutions of the Bulgarian Academy of Sciences: the National History Museum (Sofia) and the Institute of Biodiversity and Ecosystem Research (Sofia).

**Chimpanzee Behaviour: Recent Understandings from Captivity and the Forest**

*Mary Lee Abshire Jensvold, Ph.D. (Central Washington University, Ellensburg, WA USA and Friends of Washoe, Ellensburg, WA, USA)*

In series: *Animal Science, Issues and Research*


Hardcover: 978-1-53615-906-6. $160.00.

Chimpanzee Behaviour: Recent Understandings from Captivity and the Forest brings diverse topics together in one volume. It presents new data from chimpanzee hunting behaviour and tool use in the forest. It covers gestural communication in free-living populations and sign language communication in captive individuals. It presents research in chimpanzee artwork including numerous images. Finally it provides a framework for care in captivity with a humane approach.

**Encyclopedia of Animal Science (15 Volume Set)**

*Douglas Drake and Tracey Klein*

In series: *Animal Science, Issues and Research*

2019.

Hardcover: 978-1-53615-691-1. $2250.00.

This 15 volume set covers a wide range of topics, including: · marine mammals · zoonoses · toxins · climate change · evolution · animal anatomy.

**Salamanders: Habitat, Behavior and Evolution**

*Rashid Gerasimov*

In series: *Animal Science, Issues and Research*

2020.

Softcover: 978-1-53616-470-1. $82.00.
e-book: 978-1-53616-471-8. $82.00.

In Waterton Lakes National Park, located in southwest Alberta, Canada, under-road crossing structures were installed in 2008 to protect a population of long-toed salamander (*Ambystoma macrodactylum*) at Linnet Lake from mortality during breeding migrations that intersected with the park’s entrance road. This compilation first investigates orientation and movement patterns of marked individuals at Linnet Lake in 2013 and 2014, and at a smaller, shallower wetland Stable Pond in 2014 to document in detail how long-toed salamanders used the terrestrial landscape around breeding sites during adult migration and juvenile dispersal. Following this, the authors use generalized linear models to model salamander occurrence and abundance in the Beaver Hills region of north-central Alberta as a function of land cover type and pocket gopher density. The authors go on to address whether any ecological barriers exist in the distribution range of the two neotropical species *N. strauchii* and *N. crocatus*. According to the findings of this study, an identity test was found to be significantly different from the null distribution, whereas a background test was not significantly different from the null distribution. The concluding chapter summarizes the processes by which light is converted into neural signals by rods and cones and then transmitted to downstream neurons in the retina, with a focus on salamander photoreceptors. The different types of photoreceptor cells and other light-sensitive cells in salamanders and their role in vision are also discussed.
Sheep Diseases: Signs, Symptoms and Prevention

Michael Papst

In series: Animal Science, Issues and Research
Softcover: 978-1-53615-987-5. $82.00.
e-book: 978-1-53615-988-2. $82.00.

Sheep Diseases: Signs, Symptoms and Prevention first addresses a comprehensive review of sheep mastitis. The authors cover up-to-date reports on aetiology and epidemiology, important features of the disease, such as pathogenesis, clinical signs and diagnosis, and the current knowledge on treatment and prophylactic strategies for mastitis control. The following study examines listeriosis, a life threatening disease. Infections are caused by Listeria monocytogenes, which enters by inhalation, orally and by ocular mucosa. Normally, disease will not be produced if the host is immunocompetent, but when the immune system is depressed. Aiming to evaluate lesions caused by listeriosis in sheep from 2013 to 2017, all cases sent to the Research Center of Advanced Studies in Animal Health were analyzed. The concluding investigation aims to identify diseases transmitted by Melophagus ovinus, since it serves as vector of pathogenic diseases such as Trypanosoma melophagium, Anaplasma ovis, Blue tongue virus, Bartonella schoenbuchensis, Bartonella chomelii, Bartonella melophagi, and Bartonella spp all over the world.

The Zoological Guide to Crustacea

Noelle Lachance

In series: Animal Science, Issues and Research
2019.
Softcover: 978-1-53616-366-7. $95.00.
e-book: 978-1-53616-367-4. $95.00.

The Zoological Guide to Crustacea opens by providing an update on the cave crustacean decapods from Mexico, because in the last thirty years several species have been described. Mexico has diverse cave environments according to cave origin, such as: karstic caves, volcano caves with freshwater habitats and anchialine caves with marine and brackish habitats. The following study focuses on a total of 2,700 Artemia franciscana collected at the Al Wathba Reserve between December 2017 and May 2018, which were examined for the presence of larval helminths by direct microscopy of glycerin mounted specimens. Of these, 341 (= 12.6%) specimens contained different species of the Hymenopepididae and Progynotaeniidae families. The penultimate study investigates whether the non-marine ostracod Heterocypris incongruens can detect and react to chemical compounds derived from a predator and from injured conspecifics. The closing study demonstrates the diversity of larval phases and their importance to lobster populations and fisheries, and provides a summary of larval developmental patterns and behaviors and their potential impacts on larval dispersal and lobster demographic connectivity.


Erasmus Darwin, M.D. F.R.S

In series: Animal Science, Issues and Research
Hardcover: 978-1-53614-872-5. $250.00.

This 2 volume set is written by the grandfather of Charles Darwin. The purpose of the books is to reduce the facts belonging to animal life into classes, orders, genera, and species; and, by comparing them with each other, to unravel the theory of diseases.

Zoonomia. Volume II: The Laws of Organic Life

Erasmus Darwin, M.D. F.R.S

In series: Animal Science, Issues and Research

This 2 volume set is written by the grandfather of Charles Darwin. The purpose of the books is to reduce the facts belonging to animal life into classes, orders, genera, and species; and, by comparing them with each other, to unravel the theory of diseases.
**Mathematics and Statistics**

**Applied Mathematics**

**Mathematical Modeling of Real World Problems: Interdisciplinary Studies in Applied Mathematics**  
Zafer Aslan (Istanbul Aydin University, Computer Sciences, Istanbul, Turkey), Funda Dökmen (Kocaeli University, Food and Agricultural Vocational School, Kocaeli, Turkey), Enrico Feoli (University of Trieste, Department of Life Sciences, Trieste, Italy) and Abul H. Siddiqi (Sharda University, Greater Noida, NCR, India)  
In series: *Mathematics Research Developments*  
2019.  

Data mining provides avenues for proper understanding of real world problems. For researchers interested in data mining and new applications, this book is a multidisciplinary ‘handbook’ in data processes, engineering and medical applications. The authors from the different parts of the world discuss major issues of importance for integrated mathematical implementation and developing experiences. From the general spectrum, the individual spectra can be allowing for separate detection and monitoring of the problem by decomposing the space and time series into signal and noise components. It provides an up-front review of mathematical modeling of real world problems and interdisciplinary studies in applied mathematics that are not only for scientists, engineers, planners or, social scientists but because also everyone can read and understand the real world problems from environment to medicine and their interaction to mathematical implementation. Mathematical studies of the book are aimed to analyze and visualize real world problems in engineering and environmental studies like drought survey, precipitation and erosivity, cloud clarification, estimation of convection scheme and non-linear time series of air pollution, water management, water quality and river pollution and also in medical sciences like, ECG analyses, neurosurgery, computational neuroscience, brain disasters, Parkinson diseases, support vector machine, logic and mathematics. Authors recommend it to researchers with an interest in interaction of social, environmental, agricultural and medical scientists, engineers and planners who are applying wavelets and applied mathematics in their research. The book was edited by Prof. Dr. Zafer ASLAN – Istanbul Aydin University, Assoc. Prof. Dr. Funda DÖKMEN – Kocaeli University, Prof. Dr. Abul Hasan SIDDIQI – Sharda University and Prof. Dr. Enrico FEOLI – University of Trieste.

**Nonlinear Integral Equations on Time Scales**  
Svetlin G. Georgiev (Sorbonne University, Paris, France; Faculty of Mathematics and Informatics, Department of Differential Equations, Sofia University, Sofia, Bulgaria) and Inci M. Erhan (Atilim University, Department of Mathematics, Ankara, Turkey)  
In series: *Theoretical and Applied Mathematics*  

This book presents an introduction to the theory of nonlinear integral equations on time scales. Many population discrete models such as the logistic model, the Ricker model, the Beverton-Holt model, Leslie-Gower competition model and others can be investigated using nonlinear integral equations on the set of the natural numbers. This book contains different analytical and numerical methods for investigation of nonlinear integral equations on time scales. It is primarily intended for senior undergraduate students and beginning graduate students of engineering and science courses. Students in mathematical and physical sciences will find many sections of direct relevance. This book contains nine chapters, and each chapter consists of numerous examples and exercises.
Uncertainty Quantification: Advances in Research and Applications
Luis Chase
In series: Mathematics Research Developments
Softcover: 978-1-53614-862-6. $82.00.
e-book: 978-1-53614-863-3. $82.00.
In recent times, polynomial chaos expansion has emerged as a dominant technique to determine the response uncertainties of a system by propagating the uncertainties of the inputs. In this regard, the opening chapter of Uncertainty Quantification: Advances in Research and Applications, an intrusive approach called Galerkin Projection as well as non-intrusive approaches (such as pseudo-spectral projection and linear regression) are discussed. Next, the authors introduce a new methodology to determine the uncertainties of input parameters using CIRCE software to overcome the reliance on expert judgment. The goal is to determine and evaluate the uncertainty bounds for physical models related to reflood model of MARS-KS code Vessel module (coupled with COBRA-TF) using both CIRCE and the experimental data of FEBA. Lastly, uncertainties related to rheological model parameters of skeletal muscles are modeled and analyzed, and available data are acquired and fused for hyperelastic constitutive model parameters with Neo-Hookean and Mooney-Rivlin formulations.

Undergraduate Research at Cameron University on Iterative Procedures in Banach and Other Spaces
Ioannis K. Argyros (Cameron University, Department of Mathematical Sciences, Lawton, OK, US) and Samundra Regmi (Cameron University, Department of Mathematical Sciences, Lawton, Oklahoma, US)
In series: Mathematics Research Developments
2019.
Hardcover: 978-1-53616-058-1. $195.00.
This book is intended for undergraduate and graduate researchers and practitioners in computational sciences and as a reference book for an advanced computational methods course. We have included new results for iterative procedures in abstract spaces general enough for handling inverse problems in various situations related to real-life problems through mathematical modeling. The book contains a plethora of updated bibliography and provides comparison between various investigations made in recent years in the field of computational mathematics in the wide sense. Iterative processes are the tools used to generate sequences approximating solutions of equations describing the real-life problems stated above and others originating from Biosciences, Engineering, Mathematical Economics, Mathematical Biology, Mathematical Chemistry, Mathematical Physics Medicine, Mathematical Programming, and other disciplines. The book also provides recent advancements on the study of iterative procedures and can be used as a source from which one can obtain the proper method to use in order to solve a problem. The book requires a fundamental background in Mathematical Statistics, Linear Algebra and Numerical Analysis. It may be used as a self-study reference or as a supplementary text for an advanced course in Biosciences, Engineering and Computational Sciences.

Data Analysis
Statistical Modelling of Complex Correlated and Clustered Data Using Household Surveys
Data in Africa
Ngianga-Bakwin Kandala, PhD (Faculty of Engineering and Environment, Northumbria University, UK), and Lawrence Kazembe, PhD (Head of Department, Statistics and Population Studies, Faculty of Science, University of Namibia)
In series: Research Methodology and Data Analysis
2019.
e-book: 978-1-53615-982-0. $230.00.
In order to assist a hospital in managing its resources and patients, modelling the length of stay is highly important. Recent health scholarship and practice has largely remained empirical, dwelling on primary data. This is critically important, first, because health planners generally rely on data to establish trends and patterns of disease burden at national or regional level. Secondly, epidemiologists depend on data to investigate possible risk factors of the disease. Yet the use of routine or secondary data has, in recent years, proved increasingly significant in such endeavours. Various units within the health systems collected such data primarily as part of the process for surveillance, monitoring and evaluation. Such data is sometimes periodically supplemented by population-based sample survey datasets. Thirdly, coupled with statistical tools, public health professionals are able to analyze health data and breathe life into what may turn out to be meaningless data. The main focus of this book is to present and showcase advanced modelling of routine or secondary survey data. Studies demonstrate that statistical literacy and knowledge are needed to understand health research outputs. The advent of user-friendly statistical packages combined with computing power and widespread availability of public health data resulted in
more reported epidemiological studies in literature. However, analysis of secondary data, has some unique challenges. These are most widely reported health literature, so far has failed to recognize resulting in inappropriate analysis, and erroneous conclusions. This book presents the application of advanced statistical techniques to real examples emanating from routine or secondary survey data. These are essentially datasets in which the two editors have been involved, demonstrating how to tackle these challenges. Some of these challenges are: the complex sampling design of the surveys, the hierarchical nature of the data, the dependence of data at the sampled cluster and missing data among many more challenges. Using data from the Health Management Information System (HMIS), and Demographic and Health Survey (DHS), we provide various approaches and techniques of dealing with data complexity, how to handle correlated or clustered data. Each chapter presents an example code, which can be used to analyze similar data in R, Stata or SPSS. To make the book more concise, we have provided the codes on the book’s website. The book considers four main topics in the field of health sciences research: (i) structural equation modeling; (ii) spatial and spatio-temporal modeling; (iii) correlated or clustered copula modeling; and (iv) survival analysis. The book has potential to impact methodologists, including students undertaking Master’s or Doctoral level programmes as well as other researchers seeking some related reference on quantitative analysis in public health or health sciences or other areas where data of similar nature would be applicable. Further the book can be a resource to public health professionals interested in quantitative approaches to answer questions of epidemiological nature. Each chapter starts with a motivating background, review of statistical methods, analysis and results, ending discussion and possible recommendations.

General Mathematics

Connections between Mathematics, the Arts and Architecture

Nicoletta Sala (Institute for Complexity Study, Rome, Italy, (Italy)); 
ISSI (Institute for Scientific and Interdisciplinary Studies, Locarno, Switzerland) and Gabriele Cappellato (Academy of Architecture Mendrisio, USI- Largo Bernasconi, Mendrisio, Switzerland)

In series: Mathematics Research Developments

The purpose of this book is to analyze the interdisciplinary aspects of mathematics and geometry in reference to nature, art, and architecture. In Chapter 1, we introduce symmetry and its different meanings. Symmetry is a notion, which has been applied in the arts and architecture to find harmony and beauty. It joins aesthetics and practice, science and economy, mathematics and philosophy. In this chapter, we also analyze the influence of Vitruvius and the concept of old symmetry, received by the Renaissance. It is also interesting to note how in contemporary architecture there is often the presence of the “break” of symmetry (for example in the Frank O. Gehry’s works). Chapter 2 explains how proportions, and in particular, the golden section, has introduced aesthetic canons that have strongly influenced many artists like Polycletus, and architects, from Ictinus to Le Corbusier. In Chapter 3, we discover how curves and spirals find their application in artistic works, for example in Mycenaean jewelry, and architectural works, from the Baroque of Francesco Borromini to the Land Art of Smithson. Chapter 4 presents the importance and influence that Platonic solids and polyhedrons have had on philosophy and art through different historical periods and different cultures. For instance, we look at how Platonic solids are connected to the theory of Empedocles’ elements and Hippocrates’ theory of humors. Chapter 5 describes surfaces, discovering how different cultures have used them in different manners, including Roman aqueducts, iron bridges, and finally arriving on modern structures that base their forms on hyperboloids and paraboloids. In Chapter 6, we introduce fractal geometry, as a geometry that tries to explain nature’s irregular shapes, trying to overcome the limitations imposed by “old” Euclidean geometry. We also analyze how fractal geometry has influenced architecture in this century.

Statistics. Volume 1: The Fundamentals

Kunihiro Suzuki (Kaigan, Minato-ku, Tokyo, Japan)

In series: Mathematics Research Developments

We utilize statistics in our daily lives when we evaluate TV program ratings, predict voting outcomes, prepare stock, predict the amounts of sales, and evaluate the effectiveness of medical treatment. We predict the result not on the basis of personal experience, but on the basis of data. However, the accuracy of the prediction depends on
the data, the theory, and the depth of understanding the model. In this book, the author analyzes fundamental models to advanced models without skipping their derivation processes. It is then possible to clearly understand the assumption and approximations used in the model, and hence understand the limitation of the model. We also cover almost all of the subjects in statistics since they are all related to each other. Although this book treats advanced models, people who are not professional in science can easily understand the content since by stepping up the derivation from the fundamental level to the advanced level. The author does hope that readers can understand the meaning of the models in statistics and techniques to reach the final results.

Logic

An Essential Guide to Fuzzy Systems
Michael Gr. Voskoglou, PhD (Professor Emeritus of Mathematical Sciences, Graduate Technological Educational Institute of Western Greece, School of Technological Applications, Patras, Greece)

In series: Computational Mathematics and Analysis

2019.
Hardcover: 978-1-53616-128-1. $230.00.

The recent development of the fuzzy set theory has given scientists the opportunity to model under conditions which are vague or not precisely defined, thus succeeding to solve mathematically problems whose statements are expressed in our natural language. Since Zadeh introduced the concept of fuzzy set in 1965, many efforts have been made by specialists for improving its effectiveness to deal with uncertain, ambiguous and vague situations. As a result a series of extensions and generalizations of the ordinary fuzzy set followed and several theories have been proposed as alternatives to the fuzzy set theory. The spectrum of applications of those theories has been rapidly expanded during the last years covering physical sciences, economics and management, expert systems like financial planners, diagnostic, meteorological, information-retrieval, control systems, etc., industry, robotics, decision making, programming, medicine, biology, humanities, education and almost all the other sectors of the human activity, including human reasoning itself. The target of the present book is to become an essential guide to fuzzy sets and systems and to related theories. The whole book consists of ten chapters and a shorter commentary. It starts from the history and an introduction to fuzzy sets and logic and from a brief exposition of related theories. The management of the uncertainty in fuzzy environment as well as the evaluation of fuzzy data, frequently appearing nowadays in science and technology, are also studied. Assessment methods are presented using tools such as triangular fuzzy numbers, fuzzy relation equations and the grey system theory. An introduction to the theory of fuzzy graphs, a review of the hybrids of neural networks and fuzzy logic and an introduction to single valued neutrosophic numbers and the granular calculus of single valued neutrosophic functions are also contained among the topics of the book. More specialized topics include the controllability of non linear fuzzy fractional differential systems, the use of fuzzy probability and fuzzy possibility theory for integrating the voltage sag type detection of electrical networks, the presentation of an algorithm to highlight the importance of using statistical methods in pattern recognition, the study of the known from Physics Goursat problem for a fuzzy hyperbolic equation under the fractional Caputo $\alpha$-derivative for fuzzy-valued multivariable functions an a hybrid fuzzy potential field method for the navigation of Sumo robots. It is hoped that all the above information can provide a framework to the readers of the book that enable them to proceed to a deeper study of fuzzy systems and the related to them theories.

Mathematical Modeling

Mathematical Modeling for the Solution of Equations and Systems of Equations with Applications. Volume III

Ioannis K. Argyros (Cameron University, Department of Mathematical Sciences, Lawton, OK, US) and Santhosh George (Department of Mathematical and Computational Sciences, NIT Karnakata, India)

In series: Mathematics Research Developments

2019.
Hardcover: 978-1-53615-942-4. $270.00.
e-book: 978-1-53615-943-1. $270.00.

These books are intended for undergraduate, graduate researchers and practitioners in computational sciences, and as reference books for an advanced computational methods course. We have included new results for iterative procedures in abstract spaces general enough for handling inverse problems in various situations related to real life problems through mathematical modeling. These books contain a plethora of updated bibliography and provide comparison between various investigations made in recent years in the field of computational mathematics in the wide sense. Iterative processes are the tools used to generate sequences approximating solutions of equations describing the real life problems stated above and others originating from biosciences, engineering, mathematical economics, mathematical biology, mathematical chemistry,
Numerical Analysis

Statistics. Volume 3: Categorical and Time Dependent Data Analysis
Kunihiro Suzuki (Kaigan Minato-ku, Tokyo, Japan)
In series: Mathematics Research Developments
Hardcover: 978-1-53615-124-4. $270.00.
We utilize statistics when we evaluate TV program ratings, predict voting outcomes, prepare stock, predict the amount of sales, and evaluate the effectiveness of medical treatment. We want to predict the results not on the basis of personal experience or images, but on the basis of corresponding data. The accuracy of the prediction depends on the data and related theories. It is easy to show input and output data associated with a model without understanding it. However, the models themselves are not perfect, because they contain assumptions and approximations in general. Therefore, the application of the model to the data should be careful. We should know what model we should apply to the data, what parameters are assumed in the model, and what we can state based on the results of the models. Let us consider a coin toss, for example. When we perform a coin toss, we obtain a head or a tail. If we try the toss a coin three times, we may obtain the results of two heads and one tail. Therefore, the probability that we obtain for heads is , and the one that we obtain for tails is . This is a fact and we need not to discuss this any further. It is important to notice that the probability () of getting a head is limited to this trial. Therefore, we can never say that the probability that we obtain for heads with this coin is , in which we state general characteristics of the coin. If we perform the coin toss trial 400 times and obtain heads 300 times, we may be able to state that the probability of obtaining a head is as the characteristics of the coin. What we can state based on the obtained data depends on the sample number. Statistics gives us a clear guideline under which we can state something is based on the data with corresponding error ranges. Mathematics used in statistics is not so easy. It may be tough work to acquire the related techniques. Fortunately, software development makes it easy to obtain results. Therefore, many members who are not specialists in mathematics can perform statistical analysis with these types of software. However, it is important to understand the meaning of the model, that is, why some certain variables are introduced and what they express, and what we can state based on the results. Therefore, understanding mathematics related to the models is invoked to appreciate the results. In this book, the authors treat models from fundamental ones to advanced ones without skipping their derivation processes. It is then possible to clearly understand the assumptions and approximations used in the models, and hence understand the limitation of the models. The authors also cover almost all the subjects in statistics since they are all related to each other, and the mathematical treatments used in a model are frequently used in the other ones. Additionally, many good practical and theoretical books on statistics are presented [1]-[10]. However, these books are oriented to special cases: Fundamental, mathematical, or special subjects. The author also aims to connect theories to practical subjects. He hopes that this book will aid readers in furthering their knowledge of special cases in statistics.

Optimization

A Closer Look at Loss Function
Tatjana Sibalija (Belgrade Metropolitan University, Belgrade, Serbia)
In series: Applied Statistical Science
Edited by: Mohammad Ahsanullah (Rider University, Lawrenceville, NJ, US)
2020.
Softcover: 978-1-53616-540-1. $82.00.
e-book: 978-1-53616-552-4. $82.00.
The quality loss function, introduced by Japanese engineer, statistician and scientist Dr. Genichi Taguchi in the 1980s, is still one of the most interesting topics in applied industrial statistics and quality engineering and management, which presented a paradigm shift in quality loss and product, process and/or system quality conception. Taguchi emphasized a proactive approach toward quality in terms of embedding quality requirements into the design of product, process and/or system, which highly influenced today’s quality approaches such as the ‘quality-by-design’ concept strongly demanded in the era of the fourth industrial revolution that we are currently facing. This book contributes to a further development, extension and application of the Taguchi’s quality loss concept, aiming to overcome limitations of the traditional quadratic quality loss function and to address complex demands and circumstances in a dynamic and globalized contemporary
industrial sector. It presents essential issues and heterogeneous complementary aspects of the quality loss function, including the theoretical background and advances as well as different application studies. The opening chapter is dedicated to the quality loss functions used in quality engineering, presenting an in-depth theoretical background of the traditional loss function, the bounded loss function concept, i.e. the reflected normal loss function, and the family of inverted loss functions, and proposing the recently developed loss function types. The second chapter is focused on the Taguchi’s and inverted quality loss functions, univariate and multivariate types, and their advances and implications in tackling real, heterogeneous industrial problems in statistical quality and process control. The third chapter considers an application of the quality loss and quality cost concepts at a system level, by introducing the quality policy model of an organization, developed and implemented in a middle-sized manufacturing company in the automotive industry. The fourth chapter deals with the comparison and alignment of the Taguchi’s orthogonal arrays and the traditional full factorial approach for experimental design, including also the method for analysis of experimental results, depicted by two use cases from different industrial sectors. The last chapter proposes an advanced quality loss-based method for discrete process parameter optimization that tackles processes characterized by multiple correlated responses. The benefits of its implementation are illustrated on heterogeneous process optimization problems, and comparison with several frequently used optimization methods clearly demonstrates its superiority, effectiveness and applicability in real industrial conditions. Therefore, this book offers a unique combination of two aspects relevant for scientists and statisticians, engineers and managers, respectively: (i) strong scientific background on the quality loss function, its modifications and extensions, and novel, advanced developments; (ii) hands on approach for application of the quality loss function-based methods designed for product, process and/or system quality improvement in different stages, from the experimental design, via analysis of experimental results and process parameter optimization, toward an organizational quality policy implementation.

**Convex Optimization: Theory, Methods and Applications**

*Arto Ruud*

In series: *Mathematics Research Developments*


Softcover: 978-1-53614-696-7. $95.00.

e-book: 978-1-53614-697-4. $95.00.

Over the past two decades, it has been recognized that advanced image processing techniques provide valuable information to physicians for the diagnosis, image guided therapy and surgery, and monitoring of human diseases. Convex Optimization: Theory, Methods and Applications introduces novel and sophisticated mathematical problems which encourage the development of advanced optimization and computing methods, especially convex optimization. The authors go on to study Steffensen-King-type methods of convergence to approximate a locally unique solution of a nonlinear equation and also in problems of convex optimization. Real-world applications are also provided. The following study is focused on the design and testing of a Matlab code of the Frank-Wolfe type algorithm. The Nesterov step is proposed in order to accelerate the algorithm, and the results of some numerical experiments of constraint optimization are also provided. Lagrangian methods for numerical solutions to constrained convex programs are also explored. For enhanced algorithms, the traditional Lagrange multiplier update is modified to take a soft reflection across the zero boundary. This, coupled with a modified drift expression, is shown to yield improved performance. Next, Newton’s mesh independence principle was used to solve a certain class of optimal design problems from earlier studies. Motivated by optimization considerations, the authors show that under the same computational cost, a finer mesh independence principle can be given than before. This compilation closes with a presentation on a local convergence analysis for eighth--order variants of Hansen–Patrick’s family for approximating a locally unique solution of a nonlinear equation. The radius of convergence and computable error bounds on the distances involved are also provided.

**Optimization and Robotic Applications**

*Turgut Ozseven (Department of Computer Engineering, Tokat Gaziosmanpasa University, Tokat, Turkey)*

In series: *Robotics Research and Technology*

2020.

Softcover: 978-1-53616-525-8. $95.00.

e-book: 978-1-53616-526-5. $95.00.

Optimization is the process of obtaining the most appropriate solution by providing certain constraints for the given purpose or purposes. Mathematically, optimization can be briefly defined as minimizing or maximizing a function. In short, optimization is to look for the best. The best found is called “optimum. Optimization is used to accelerate decision-making processes and to solve real-life problems in an effective, accurate and real-time manner. In addition to the economic benefits, optimization is also used as an effective method to include the preferences and constraints of customers, employers and employees in the decision process and to improve the quality of the resources in the system. The purpose of optimization is to achieve the best result, the best goal. Improvements can be made to the current situation or situations to achieve the best result. One of the major shortcomings in optimization and robotic is the transformation of theoretical knowledge into practice. The purpose of the book is to introduce students, teachers, researchers, and practitioners to new
advances in this area. The book content includes theoretical and practical studies prepared with the academic contributions of scientists working in different fields. It was decided to publish each chapter in the book after being examined by the scientific board. As an editor, my duty is to ensure breadth, while the chapter authors treat the delegated chapters with depth. The book is designed for practitioners or researchers of all levels of expertise from novice to expert. Each of the book’s individual topics could be considered as a compact, self-contained mini-book right under its title. The approach is to provide a framework and a set of techniques for evaluating and improving optimization and robotic. It presents a specific set of solutions, mostly obtained from real world projects and experimental studies, for routine applications. It further highlights promising emerging techniques for research and exploration opportunities. The development team of this book wants to thank their colleagues who made contributions to this book by providing continuous encouragements and thorough reviews of the chapters of the book.

**Probability and Mathematical Statistics**

**Estimation of Stochastic Processes with Missing Observations**  
Mikhail Moklyachuk (Department of Probability Theory, Statistics and Actuarial Mathematics, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine), Maria Sidei (Department of Probability Theory, Statistics and Actuarial Mathematics, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine) and Oleksandr Masyutka (Department of Mathematics and Theoretical Radiophysics, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine)  
In series: Mathematics Research Developments  
We propose results of the investigation of the problem of mean square optimal estimation of linear functionals constructed from unobserved values of stationary stochastic processes. Estimates are based on observations of the processes with additive stationary noise process. The aim of the book is to develop methods for finding the optimal estimates of the functionals in the case where some observations are missing. Formulas for computing values of the mean-square errors and the spectral characteristics of the optimal linear estimates of functionals are derived in the case of spectral certainty, where the spectral densities of the processes are exactly known. The minimax robust method of estimation is applied in the case of spectral uncertainty, where the spectral densities of the processes are not known exactly while some classes of admissible spectral densities are given. The formulas that determine the least favourable spectral densities and the minimax spectral characteristics of the optimal estimates of functionals are proposed for some special classes of admissible densities.

**Special Topics**

**Advances in Mathematics Research. Volume 26**  
Albert R. Baswell  
In series: Advances in Mathematics Research  
Hardcover: 978-1-53615-603-4. $250.00.  
In Advances in Mathematics Research, Volume 26, the opening chapter aims to show the importance of mathematical means associated with the role of Pythagorean musical tradition in mathematical and architectural contexts up to the Renaissance. The following chapter proposes a formalism which enables us to separate fields of investigation from the epistemological questions in philosophy and to consider models as parts of hierarchical model families. Continuity of the modulus and phase degrees-of-freedom of molecular electronic states is commented upon in the next section, and the resultant entropy/information descriptors of electronic states, combining the probability and current contributions, are applied to classical issues in chemical-reactivity theory. Additionally, the authors study the categorical generalizations of the Möbius function emphasizing the geometric meaning of these constructions, and discuss the relations between the various approaches. The final chapter introduces the PWP method as a technique for measuring indirect influences in complex networks.
Characterizations of Exponential Distribution by Ordered Random Variables
Mohammad Ahsanullah (Rider University, Lawrenceville, NJ, US)
In series: Applied Statistical Science
Edited by: Mohammad Ahsanullah (Rider University, Lawrenceville, NJ, US)
Softcover: 978-1-53615-402-3. $95.00.
e-book: 978-1-53615-403-0. $95.00.
Exponential distribution is one of the most-used distributions in the theory and practice of statistics. It has several important properties like being memoryless and having a constant hazard rate. The field of characterization is developed in different branches of statistics and applied probability. Ordered random variables are common in various applications in practice. In this book, characterizations of exponential distribution using ordered random variables are presented. Most of the known results as well as many new results are given in this book. The aim of the book is to present various characterizations of exponential distribution based on ordered random variables. The book is written on a lower technical level and requires basic knowledge of mathematics and statistics. Chapter 1 gives some basic properties of exponential distribution. Chapters 2, 3, and 4 give the characterization of exponential distribution based on order statistics, record values, and generalized order statistics.

Characterizations of Recently Introduced Univariate Continuous Distributions II
G.G. Hamedani (Department of Mathematics, Statistics and Computer Science, Marquette University, WI, US)
In series: Mathematics Research Developments
e-book: 978-1-53614-999-0. $230.00.
This monograph is, as far as the author has gathered, the second of its kind (the first one was published by Nova in 2017 with coauthors Hamedani and Maadooliat) which presents various characterizations of a wide variety of continuous distributions. These two monographs could also be used as sources to prevent reinventing and duplicating the already exiting distributions. This current book consists of seven chapters. The first chapter lists cumulative and density functions of two hundred univariate distributions. Chapter two provides characterizations of these distributions: (i) based on the ration of two truncated moments; (ii) in terms of the hazard function; (iii) in terms of the reverse hazard function; (iv) based on the conditional expectation of certain functions of the random variable. Chapter three includes the characterizations of twenty distributions, including a published paper (Hamedani and Safavimanesh, 2017). Chapter four presents characterizations of thirty six distributions, and contains a published paper (Hamedani, 2017). Chapter five covers the characterizations of forty one distributions, as well as a published paper (Hamedani, 2018a). Chapter six presents characterizations of eighty distributions, and also contains a published paper (Hamedani, 2018b). Finally, chapter seven consists of seventy proposed distributions. The main reason to include previously published papers in Chapters 3-6 is to provide a rather complete source for the interested researchers who would want to avoid reinventing the existing distributions.

Evolutionary Processes and Applications
Gaston Mandata N’Guérékata (University Distinguished Professor of Mathematics, The World Academy of Sciences (TWAS) Research Professor, School of Computer, Mathematical and Natural Sciences, Morgan State University Baltimore, MD, US)
In series: Advances in Evolution Equations
Edited by: Gaston Mandata N’Guérékata (University Distinguished Professor of Mathematics, The World Academy of Sciences (TWAS) Research Professor, School of Computer, Mathematical and Natural Sciences, Morgan State University Baltimore, MD, US)
2019.
This book presents and discusses new developments in the study of evolutionary processes. Topics discussed include evolution of magneto-acoustic waves in isothermal atmosphere, quantum dynamical semigroups, traveling waves in discrete models of biological population, motion of electrorheological fluids, Stackberg control of a backward linear heat
equation, Leray weak solutions of Navier-Stokes equation involving one directional derivative, and initial value boundary problem of an evolutionary p(x)-Laplacian equation.

Focus on Systems Theory Research
Manuel F. Casanova (University of South Carolina School of Medicine Greenville) and Ioan Opris (University of Miami, Miller School of Medicine, Miami, FL)
In series: Mathematics Research Developments
This book offers a multidisciplinary approach to systems theory, investigating its general principles, mathematical models, and applications in health sciences. It describes how leaders in the field have made a transition from equations and models to dilemmas faced in the real world. This book is meant to simplify our understanding of disparate hierarchical and complex open systems in the world by making us aware of patterns of action among its components. These interactions lead to cascading effects within the system which end up changing it as a whole. This self-organization often leads to unpredictable results transforming the system, or integrating the same, into a still more complex system. These results, not necessarily the ones originally sought by their organizers, may offer the system the best opportunity for sustainable and adaptive growth. In the end, readers of this book will gain a basic understanding of systems theory, its application to natural and manmade processes, and how systems grow and equilibrate with their environment in order to continue functioning.

Hyperbolic Equations and General Relativity
Marica Minucci (Department of Physics “Ettore Pancini”, University of Naples “Federico II” Naples, Italy)
In series: Mathematics Research Developments
Hardcover: 978-1-53615-762-8. $195.00.
This work is divided into three parts. In the first part, the hyperbolic equations’ theory is analysed, the second part concerns the Cauchy problem in General Relativity, whereas the third part gives a modern perspective of General Relativity. In the first part, the study of systems of partial differential equations allows the introduction of the concept of wave-like propagation and the definition of hyperbolic equation is given. Thus, once the definition of Riemann kernel is given, Riemann’s method to solve a hyperbolic equation in two variables is shown. The discussion moves on the fundamental solutions and its relation to Riemann kernel is pointed out. Therefore, the study of the fundamental solutions concludes by showing how to build them providing some examples of solution with odd and even number of variables. Moreover, the fundamental solution of the scalar wave equation with smooth initial conditions is studied. In the second part, following the work of Fourès-Bruhat, the problem of finding a solution to the Cauchy problem for Einstein field equations in vacuum with non-analytic initial data is presented by first studying under which assumptions second-order systems of partial differential equations, linear and hyperbolic, with n functions and four variables admit a solution. Hence, it is showed how to turn non-linear systems of partial differential equations into linear systems of the same type for which the previous results hold. These considerations allow us to prove the existence and uniqueness of the solution to the Cauchy problem for Einstein’s vacuum field equations with non-analytic initial data. Eventually, the causal structure of space-time is studied. The definitions of strong causality, stable causality and global hyperbolicity are given and the relation between the property of global hyperbolicity and the existence of Cauchy surfaces is stressed. In the third part, Riemann’s method is used to study the news function describing the gravitational radiation produced in axisymmetric black hole collisions at the speed of light. More precisely, since the perturbative field equations may be reduced to equations in two independent variables, the Green function can be analysed by studying the corresponding second-order hyperbolic operator with variable coefficients. Thus, an integral representation of the solution in terms of the Riemann kernel function can be given.
New Trends in Fractional Programming
Ram U. Verma (International Publications USA, Mathematical Sciences Division, Denton, TX, US)
In series: Mathematics Research Developments
This monograph presents smooth, unified, and generalized fractional programming problems, particularly advanced duality models for discrete min-max fractional programming. In the current, interdisciplinary, computer-oriented research environment, these programs are among the most rapidly expanding research areas in terms of their multi-faceted applications including problems ranging from robotics to money market portfolio management. The other more significant aspect of this monograph is in its consideration of minimax fractional integral type problems using higher order sonvexity and seminivexity notions. This is significant for the development of different types of duality models in terms of weak, strong, and strictly converse duality theorems, which can be handled by transforming them into generalized fractional programming problems. Fractional integral type programming is one of the fastest expanding areas of optimization, which feature several types of real-world problems. It can be applied to different branches of engineering (including multi-time multi-objective mechanical engineering problems) as well as to economics, to minimize a ratio of functions between given periods of time. Furthermore, it can be utilized as a resource in order to measure the efficiency or productivity of a system. In these types of problems, the objective function is given as a ratio of functions. For example, we consider a problem that deals with minimizing a maximum of several time-dependent ratios involving integral expressions.

Next Generation Newton-Type Methods
Ram U. Verma, PhD (International Publications USA, Mathematical Sciences Division, Denton, TX, US)
In series: Mathematics Research Developments
Hardcover: 978-1-53615-456-6. $160.00.
This monograph is aimed at presenting “Next Generation Newton-Type Methods,” which outperform most of the iterative methods and offer great research potential for new advanced research on iterative computational methods. This monograph provides readers with a unique presentation on the subject that can be used for interdisciplinary research for the world scientific community at large. The methods presented therein are of great importance and significance since these can be extended, generalized and applied to solving equations defined not only on the real line but on abstract spaces as well. This monograph is a must-read for undergraduate students, graduate students, professors, researchers, and research scientists at all universities and colleges.

Revisiting Fibonacci Numbers through a Computational Experiment
Sergei Abramovich (School of Education and Professional Studies, State University of New York at Potsdam, NY, US) and Gennady A. Leonov (Faculty of Mathematics and Mechanics, St Petersburg State University, Saint-Petersburg, Russian Federation)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-53614-905-0. $195.00.
The material of this book stems from the idea of integrating a classic concept of Fibonacci numbers with commonly available digital tools including a computer spreadsheet, Maple, Wolfram Alpha, and the graphing calculator. This integration made it possible to introduce a number of new concepts such as: Generalized golden ratios in the form of cycles represented by the strings of real numbers; Fibonacci-like polynomials the roots that define those cycles’ dependence on a parameter; the directions of the cycles described in combinatorial terms of permutations with rises, as the parameter changes on the number line; Fibonacci sieves of order k; (r, k)-sections of Fibonacci numbers; and polynomial generalizations of Cassini’s, Catalan’s, and other identities for Fibonacci numbers. The development of these concepts was motivated by considering the difference equation
\[ f_{n+1} = af_n + bf_{n-1}, f_0 = f_1 = 1, \]
and, by taking advantage of capabilities of the modern-day digital tools, exploring the
behavior of the ratios \( f_{n+1}/f_n \) as \( n \) increases. The initial use of a spreadsheet can demonstrate that, depending on the values of \( a \) and \( b \), the ratios can either be attracted by a number (known as the Golden Ratio in the case \( a = b = 1 \)) or by the strings of numbers (cycles) of different lengths. In general, difference equations, both linear and non-linear ones serve as mathematical models in radio engineering, communication, and computer architecture research. In mathematics education, commonly available digital tools enable the introduction of mathematical complexity of the behavior of these models to different groups of students through the modern-day combination of argument and computation. The book promotes experimental mathematics techniques which, in the digital age, integrate intuition, insight, the development of mathematical models, conjecturing, and various ways of justification of conjectures. The notion of technology-immune/technology-enabled problem solving is introduced as an educational analogue of the notion of experimental mathematics. In the spirit of John Dewey, the book provides many collateral learning opportunities enabled by experimental mathematics techniques. Likewise, in the spirit of George Pólya, the book champions carrying out computer experimentation with mathematical concepts before offering their formal demonstration. The book can be used in secondary mathematics teacher education programs, in undergraduate mathematics courses for students majoring in mathematics, computer science, electrical and mechanical engineering, as well as in other mathematical programs that study difference equations in the broad context of discrete mathematics.

**Statistics. Volume 2: Multiple Variable Analysis**

*Kunihiro Suzuki (Kaigan Minato-ku, Tokyo, Japan)*

In series: *Mathematics Research Developments*


Hardcover: 978-1-53615-122-0. $270.00.


We utilize statistics in our daily life: when we evaluate TV program ratings, predict voting results, prepare stocks, make sales predictions, and when we evaluate the effectiveness of medical treatments, to name a few. We predict the results not on the basis of personal experience, but on the basis of data. However, the accuracy of the prediction depends on the data, the theory, and the depth of understanding of the model used. This book consists of three volumes: The first volume covers the fundamentals of statistics; The second volume discusses multiple variable analyses; and the third volume covers categorical and time dependent data analysis. In this volume, we cover multiple variable analysis. We frequently use many variables in the real world, and it’s important to study the relationship between these variables. First, we treat correlation and regression as two variables, and then extend to multiple variables. We also review various techniques to approach the many variables in this volume. In this book, we cover fundamental models to advanced models without skipping their derivation processes. We can then clearly understand the assumption and approximations used in each model, and hence, understand the limitations of the models. We also discuss almost all of the subjects in statistics, since they are all related to each other. Although this book includes advanced models, readers who are not statisticians can easily understand the content, since we work our way up the derivations from the fundamental level to advanced levels without skipping any. We do hope that the readers will come away with an understanding of the meaning of the models in statistics, and the techniques used to reach the final results.

**Physics and Astronomy**

**Applied Physics**

**Recent Developments in Cryogenics Research**

*Sergiy Putselyk, Ph.D. (FERCHAU Engineering GmbH, Köln, Germany)*

In series: *Physics Research and Technology*


Cryogenics, a term commonly used to refer to very low temperatures, had its beginning in the latter half of the 19th century. Traditionally, this field is separated from Cryogenic Engineering and Low Temperature Physics (LTP). Cryogenic engineering is concerned with the design and development of low-temperature systems and components, while low temperature physics is more related to the fundamental research of material or fluid properties. This book discusses some recent findings and developments as well as gives an outlook on the fields of helium cryogenics and LTP. The main focus will be given to the helium cryogenics, though a smaller review is also presented for the fields of
Science and Technology

cryogenic energy storage facilities. Some future trends and R&D activities are also discussed. To orient the reader, the first four chapters are related to LTP, while the major part of the book is then devoted to helium cryogenics, for example, refrigeration techniques, cryostats, low temperature electronics, safety, etc. It should be particularly suited for advanced students, young researchers or engineers, who are intending to proceed with careers in helium cryogenics or LTP. However, the authors believe that the book will also be of value to experienced scientists, since it describes several very recent advances in experimental low temperature physics and technology, for example, ultra-low temperature technique and thermometry, as well as progress in helium cryogenics, such as heat transfer, cryostat designs for large facilities, and refrigerator developments. Extensive references are provided for the readers interested in the details of the cryogenic engineering advances. And last but not least, the authors hope that this book will widen the horizons of many without a solid state background, but with a general interest in low temperature physics and helium cryogenics. In attempting to cover such a wide field, a large degree of selection has been necessary, as complete volumes have been written on many topics which here have had to be covered in very few pages or less. It is inevitable that not everyone will agree with the present choice, especially if it is their own subject which has been discussed very briefly or not mentioned at all, and the editor accepts full responsibility for the selections made. The book is written at a level which should be followed by a university graduate in science or engineering, although, if their background has not included a course in cryogenic engineering, general or solid-state physics, some groundwork may be lacking.

Astronomy and Astrophysics

Space Exploration: Development, Planning and Challenges
Thomas R. Reed
In series: Space Science, Exploration and Policies
Softcover: 978-1-53615-032-2. $95.00.

Human spaceflight at NASA began in the 1960s with the Mercury and Gemini programs leading up to the Apollo moon landings. After the last lunar landing, Apollo 17, in 1972, NASA shifted its attention to low earth orbit operations with human spaceflight efforts that included the Space Shuttle and International Space Station programs through the remainder of the 20th century. Exploration of our solar system has brought great knowledge to our Nation’s scientific and engineering community over the past several decades. As we expand our visions to explore new, more challenging destinations, we must also expand our technology base to support these new missions. NASA’s Space Technology Mission Directorate is tasked with developing these technologies for future mission infusion and continues to seek answers to many existing technology gaps.

Atomic and Molecular Physics

An Introduction to Molecular Dynamics
Mark S. Kemp
In series: Physics Research and Technology
Softcover: 978-1-53616-054-3. $95.00.
e-book: 978-1-53616-055-0. $95.00.

In the opening chapter of An Introduction to Molecular Dynamics, the method of statistical geometry, based on the construction of a Voronoi polyhedral, is applied to the pattern recognition of atomic environments and to the investigation of the local order in molecular dynamics-simulated materials. Next, the authors discuss the methodology of bimolecular simulations and their advancements, as well as their applications in the field of nanoparticle-biomolecular interactions. The theory of molecular dynamics simulation and some of the recent molecular dynamics methods such as steered molecular dynamics, umbrella sampling, and coarse-grained simulation are also discussed. The use of auxiliary programs in the cases of modified cyclodextrins is discussed. Additionally, results from molecular dynamics studies on cases of inclusion compounds of molecules of different sizes and shapes encapsulated in the same host cyclodextrin have been examined and compared. In closing, the authors discuss the methodology of molecular dynamics simulation with a non-constant force field. In the context of molecular simulations, the term “force field” refers to a set of equations and parameters for the calculation of forces acting on the particles of the system and its potential energy.
Classical and Fluid Mechanics

Harmonic Oscillators: Types, Functions and Applications
Yilun Shang (Department of Computer and Information Sciences, Northumbria University, Newcastle, UK)
In series: Physics Research and Technology
Hardcover: 978-1-53615-810-6. $160.00.
This book gathers state-of-the-art advances on harmonic oscillators including their types, functions, and applications. In Chapter 1, Neetik and Amlan have discussed the recent progresses of information theoretic tools in the context of free and confined harmonic oscillator. Confined quantum systems have provided appreciable interest in areas of physics, chemistry, biology, etc., since its inception. A particle under extreme pressure environment unfolds many fascinating, notable physical and chemical changes. The desired effect is achieved by reducing the spatial boundary from infinity to a finite region. Similarly, in the last decade, information measures were investigated extensively in diverse quantum problems, in both free and constrained situations. The most prominent amongst these are: Fisher information, Shannon entropy, Renyi entropy, Tsallis entropy, Onicescu energy and several complexities. Arguably, these are the most effective measures of uncertainty, as they do not make any reference to some specific points of respective Hilbert space. These have been invoked to explain several physico-chemical properties of a system under investigation. Kullback-Leibler divergence or relative entropy describes how a given probability distribution shifts from a reference distribution function. This characterizes a measure of discrimination between two states. In other words, it extracts the change of information in going from one state to another. In Chapter 2, Nabakumar, Subhasree, and Paulami have revisited classical-quantum correspondence in the context of linear Simple Harmonic Oscillator (SHO). According to Bohr's correspondence principle, quantum mechanically calculated results match with the classically expected results when quantum number is very high. Classical quantum correspondence may also be visualized in the limit when the action integral is much greater than Planck's constant. When de-Broglie wave length associated with a particle is much larger than system size, then quantum mechanical results also match with the classical results. In the context of dynamics, Ehrenfest equation of motion is used in quantum domain, which is analogous to classical Newton's equation of motion. SHO is one of the most important systems for several reasons. It is one of the few exactly solvable problems. Any stable molecular potential can be approximated by SHO near the equilibrium point. This builds the foundation for the understanding of complex modes of vibration in large molecules, the motion of atoms in a solid lattice, the theory of heat capacity, vibration motion of nuclei in molecule etc. The authors have revisited the common solution techniques and important properties of both classical and quantum linear SHO. Then they focused on probability distribution, quantum mechanical tunneling, classical and quantum dynamics of position, momentum and their actuations, virial theorems, etc. and also analyzed how quantum mechanical results finally tend to classical results in the high quantum number limit. In Chapter 3, Neeraj has discussed the nature of atomic motions, sometimes referred to a lattice vibrations. The lattice dynamics deals with the vibrations of the atoms inside the crystals. In order to write the dynamic equations of the motion of crystal atoms, we need to describe an inter-atomic interaction. Therefore, it is natural to start the study of the lattice dynamics with the case of small harmonic vibrations. The dynamics of one-dimensional and two-dimensional vibrations of nonatomic and diatomic crystals can be understood by using the simple model forces based on harmonic approximation. This harmonic approximation is related to a simple ball-spring model. According to this model, each atom is coupled with the neighboring atoms by spring constants. The collective motion of atoms leads to a distinct traveling wave over the whole crystal, leading to the collective motion, so-called phonon. The simple ball-spring model enlightens us some of the significant common features of lattice dynamics that have been discussed throughout this chapter. Further, this chapter helps in understanding the quantization energy of a harmonic oscillation and the concept of phonon.

Electricity

An Essential Guide to Electrical Conductivity and Resistivity
Luke Lewin
In series: Physics Research and Technology
Softcover: 978-1-53615-047-6. $95.00.
e-book: 978-1-53615-786-4. $95.00.
An Essential Guide to Electrical Conductivity and Resistivity opens with experimental and theoretical data on the important structurally sensitive property of the molten oxide-chloride systems KCl (50 mol. %)–PbCl2 (50 mol. %), CsCl (18.3 mol. %)–PbCl2 (81.7 mol. %) and CsCl (71.3 mol. %)–PbCl2 (28.7 mol. %) with PbO concentration reaching 20 mol. % in the temperature range of 764 – 917 K. This compilation also reports on recent developments in the stabilization, carbonization, and activation of naturally grown biomass, their physical and chemical properties, and major applications in supercapacitors. A brief overview of the application areas of the electrical resistivity method, a non-destructive and
interpreted in terms of complex physical quantities, making it possible to estimate magnitudes of imaginary parts and to structure of the distribution of all general measurands, which differed from classical Poisson and Gauss distributions. The results of Shnoll experiments that revealed the fine patterns in the data could be explained by complex numbers. In this compilation, the authors discuss how the necessity of the complexification of physics, mechanics, and quantum mechanics can be justified. The development of the numerical modelling of this process and the progress toward the amplified spontaneous emission, generated from a thulium-doped silica fiber at the 2µm wavelength region. The authors go on to review the behavior of critical systems of the Ising universality class in strip geometry with variable magnetic state between two adjacent Mn and Mn atoms. The authors propose a new mechanism where dependence on data selection, theory, and procedural decision can be explored community-wide. Constant Finder (http://www.constantfinder.org) is a comprehensive automated code and user interface which allows users to make their own procedural decisions, adjust experimental and theoretical values and uncertainties, and pose alternatives to theory within several global data-fitting frameworks. Lastly, an exposition of developments in inelastic scattering at low and intermediate energies is theoretically and computationally given. The Schrödinger equation is fundamental for understanding nuclear, atomic and molecular sciences. This equation describes quantum systems, particularly dispersion effects.

Horizons in World Physics. Volume 299

In series: Horizons in World Physics

Hardcover: 978-1-53615-361-3. $250.00.
e-book: 978-1-53615-362-0. $250.00.

Horizons in World Physics, Volume 299 opens with a study on the analysis of photoluminescence spectra of II-VI-based thin films (pure II-VI semiconductor compounds – CdTe, ZnTe, CdSe, Cd1-xZn1Te ternary compound, CdS:Dy rare-earth element doped II-VI compound) at different substrate temperatures. Next, the authors introduce a novel universal carrier-guided nanopore dielectrophoresis technology that can selective capture and detection of single nucleic acid molecules. In this approach, each target nucleic acid molecule is hybridized with a designed cationic carrier to impart a tunable synthetic dipole to the target. This compilation also describes the numerical investigations of some of the possibilities for enhancing the amplified spontaneous emission, generated from a thulium-doped silica fiber at the 2µm wavelength region. The authors provide a fundamental description of the amplified spontaneous emission process and the progress toward the development of the numerical modelling of this phenomenon. Abinitio calculations and high temperature series expansions are used to study the electronic and magnetic properties of Mn2X compounds. Polarized spin and spin-orbit coupling are included in the calculations within the framework of the antiferromagnetic state between two adjacent Mn and Mn atoms. The authors go on to review the behavior of critical systems of the Ising universality class in strip geometry with variable symmetry-breaking boundary conditions and an internal grain boundary based on the Miheev–Fisher theory. The foundations of the method and the concept of the grain boundary within it are elucidated. Lastly, the structural and optical properties of thin smectic films is discussed by way of a combination of statistical mechanical theories, hydrodynamics of liquid crystal phases, and optical and calorimetric techniques. The authors examine the validity of theoretical descriptions of thin smectic films, both deposited on a solid surface or stretched over an opening.
suggest the time and space dependence. Next, Horizons in World Physics. Volume 300 reviews studies on synchronization for three different categories of coupled Hamiltonian systems: measure synchronization in coupled classical Hamiltonian systems; measure synchronization in coupled quantum Hamiltonian systems; Hybrid synchronization in mixed quantum-classical systems. The authors also discuss the underlying source of brain functional magnetic resonance imaging (MRI), demonstrating their computed inverse MRI method for brain functional reconstruction and motor task mapping using a 7T finger-tapping experiment. Additionally, the authors develop a mean-field mathematical method to calculate the ground states of antiferromagnets and better understand the applied magnetic-field induced exotic properties. Within antiferromagnetic materials, competitive and cooperative interactions exit leading to substance extraordinary magnetic states. The fundamental possibilities of constructing a mathematical model the creation of the universe, using special protoparticles of small size and small mass, are discussed. If the basis of processes in the universe is motion, then one can proceed from the basic laws of physics, statistical and thermodynamic equilibrium. Following this, this collection examines how the conservation of the energy flux in turbulent jets that propagate in the intergalactic medium allows for the deduction of the law of motion in classical and relativistic cases. Four types of intergalactic medium are considered: constant density, hyperbolic decrease of density, inverse power law decrease of density and a Lane–Emden profile. In the penultimate chapter, a general formalism is explored which allows for the calculation of ground-state vibrational energy of bounded systems directly. The proposed theoretical approach was numerically tested for boron nitride molecular, nanosheet, and crystalline modifications and some other systems within an initial quasi-classical approximation. The closing chapter discusses the emerging evidence that a fourth flavor of neutrino may exist. The fourth neutrino is known as the sterile neutrino and may participate in neutrino oscillations. These oscillations can be viewed as mass state transitions in parametrized relativistic dynamics.

Horizons in World Physics. Volume 301
Albert Reimer
In series: Horizons in World Physics
Hardcover: 978-1-53616-472-5. $250.00.

Horizons in World Physics. Volume 301 opens with a discussion on how symplectic difference schemes are of great interest because they possess a number of fundamental properties of Hamiltonian differential equations. In particular, they inherit integral invariants such as momentum, angular momentum, and integrals, which are determined by the symplectic structure of the phase space, including the phase-space volume. Following this, the authors describe the dependence of amplified spontaneous emission on the length through the geometrical gain coefficient. In addition, its accuracy in various media with excitation lengths of 200 and 84 cm for N2 and KrF lasers, respectively, is described, and even in small 2-mm-long polymer or few-centimeter-long Ar x-ray lasers. Later, a simple two-dimensional nonstationary problem is formulated for describing the dispersion of a pollutant in a limited area. Its solutions, as well as solutions of an adjoint problem, are used to obtain dual estimates of the pollutant concentration at a point. One study focuses on the dynamics of charged particles subjected to the Lorentz force inside particle accelerators and the correct derivation of their equations of motion and, ultimately, of their trajectories. As we will see, the reason for the increased challenge is the presence of accelerated motion. Many geometrical optics models have been proposed to describe the propagation of paraxial Gaussian beam. However, those paraxial ray-optics models are inapplicable in the paraxial condition. As such, the penultimate chapter introduces a skew line ray-based model to represent the propagation properties of nonparaxial Gaussian beam under the oblate spheroidal coordinates. The free-space evolution of light beam’s complex waveform, including amplitude and phase, is derived via this model.

Geophysics

Energetic Particles and Auroras in Magnetosphere/Ionosphere
Lev I. Dorman (Founder/Head, Israel Cosmic Ray & Space Weather Center & Israeli-Italian Emilio Segre’ Observatory on Mt. Hermon, Tel Aviv University, Golan Research Institute & Israel Space Agency; Founder/Chief Scientist, Cosmic Ray Dept, IZMIRAN, Russia)
In series: Physics Research and Technology
Hardcover: 978-1-53615-904-2. $310.00.

The importance and actuality of the Geomagnetosphere’s research are based on following three factors: 1. The Geomagnetosphere is the nearest giant natural Laboratory, where is possible by a lot of satellites and ground measurements investigate in details many different plasmas and energetic processes in space, caused finally by interaction of high kinetic energy solar wind plasmas and its perturbations (Interplanetary Coronal Mass Ejections – ICMEs, Interplanetary Shock Waves – ISWs, Interplanetary Interaction Regions – IIR) with frozen in Interplanetary Magnetic Fields – IMF with the rotated main geomagnetic field. This interaction leads to dynamic transformation magnetic fields in Geomagnetosphere, generation and trapping high energy particles (which can be called as Magnetospheric Cosmic Rays – MCR), generation of many types instabilities and electromagnetic radiations. These processes are in principle similar to processes in
magnetospheres of other planets and their moons, in the atmosphere of the Sun and other stars, in interplanetary and in interstellar space, in many different astrophysical objects, i.e., this research is important basis for fundamental Space and Astrophysical science. In the modern time the Technology, Economics, Navigation, TV, Internet, Radio-Connections, Military aspects, and the life of people on our planet are strongly connected with the work of many satellites, moving inside the Geomagnetosphere. Different processes and MCR in the Geomagnetosphere influence on the satellites work and often lead to satellite malfunctions up to full destroying work of their electronics—satellites became ‘dead’. The described research can be considered as basis for developing methods of forecasting dangerous situation for satellites on different orbits and to decrease the risk of satellite malfunctions and loosing, i.e., this research has important practical application. The interaction of ICME, ISW, and IIR with Geomagnetosphere leads to generation big magnetic storms accompanied with Forsbush decreases and precursory effects in Galactic Cosmic Ray (GCR) intensity. These magnetic storms are dangerous not only for satellites, but also on the Earth’s surface for technology, radio-connections, car accidents, people health (e.g., increasing frequency of infarct myocardial and brain strokes). Investigations of causes of magnetic storms can help to develop methods of their forecasting and decreasing the level of magnetic storms hazards. Therefore, the other practical application of this research is connected with the problem of space weather and space climate influence on the technology, radio-connections, navigation, transportation, and people health on the Earth in dependence of altitude and geomagnetic latitude. The present book “Energetic Particles in Geomagnetosphere/Ionosphere” contains the following Chapters:


Mathematical and Computational Physics

Understanding Density Matrices
Nadia V. Danielsen

In series: Physics Research and Technology
2019.
Hardcover: 978-1-53616-245-5. $195.00.

In Understanding Density Matrices, the modulus and phase degrees-of-freedom of molecular states are examined, the relevant continuity relations are identified, and corresponding contributions to the resultant gradient information are summarized. The geometric and physical factors in contributions to the overall gradient information content in a quantum state are also identified. Following this, a formalism is presented for the one- and two-body density matrices in coordinate space and their Fourier transforms in momentum space of a non-relativistic, self-bound, finite-size quantum system. The formalism is applied to atomic nuclei with a focus on nucleon momentum distributions which reveal important information on short-range correlations. Next, the authors investigate the problem of preparing a target initial state for a two-level system from a system-environment equilibrium or correlated state by an external field. By using the time evolutions of the population difference, the state trajectory in the Bloch sphere representation, and the trace distance between two reduced system states of the open quantum system, the effect of initial system-environment correlations on the preparation of a system state is studied. The authors also study the role of the density matrix in a cryptographic problem called quantum bit commitment, and show how it can be used as a clue for finding secure quantum bit commitment protocols. In subsequent chapter, optical bistability in ladder-plus-Y double quantum dot structure in a unidirectional ring-cavity was modeled using the density matrix theory in parallel with the momentum matrix elements of each transition, which was used to specify Rabi frequencies. Additionally, the phase transition temperatures of the two-dimensional lattice gas of the basal and prism planes of the wurtzite crystal structure were explored using the density-matrix renormalization-group method. In the closing chapter, the mathematical methods of the description of the evolution of states of quantum many-particle systems by means of the possible modifications of the density operator are considered.

Particle Physics

An Essential Guide to Electrodynamics
Norma Brewer

In series: Physics Research and Technology
Hardcover: 978-1-53615-705-5. $230.00.

The opening chapter of An Essential Guide to Electrodynamics describes a new theory of the electron, from which derives a fully deductive explanation of the chemical inertness of the group 18 elements of the periodic system. The authors...
propose that there is a need to present the detailed mathematical steps that are required to prove the equations of Maxwell textbooks and course instruction to help students gain a firm grasp of the equations and their applications. Additionally, this compilation examines the wave equation for the electromagnetic 4-potential, which has a form that explicitly involves the 4-velocity vector of a moving frame. Hence, Minkowski electrodynamics implies the absolute nature of mechanical motion in medium. Next, the authors represent the electromagnetic field from different and unknown points of view, and the duality of natural time is considered. Chapter five is focused on an accurate and profound investigation, interpretation and explanation of resonant and anomalous phenomena in radiated electromagnetic fields that arises due to the passage of charged particle beams over arbitrary-shaped periodic interfaces of natural or artificial material. Later, it is shown that a suitable modification of the Lee-Wick idea can also lead to linear potential at large distances. For this purpose, the authors study an Abelian model that “simulates” the quantum chromodynamics confining phase while maintaining the Coulomb behaviour at short distances. In the final chapter, the authors present a generalization of the transformation of the electromagnetic field from the frame co-moving with an accelerated particle into an inertial frame of reference and from an inertial frame into the frame co-moving with a moving particle.

### Leptons: Classes, Properties and Interactions

**Christopher M. Villegas**

In series: *Physics Research and Technology*

2019. 130 pp.

Softcover: 978-1-53614-929-6. $82.00.

e-book: 978-1-53614-932-6. $82.00.

In Leptons: Classes, Properties and Interactions, the authors develop a model to calculate the masses of charged leptons by quantifying the electrostatic field generated by these particles. This model is extended to weak and strong interactions in order to calculate the masses of all elementary fermions. Next, by taking the SU(2) group of weak interactions in the presence of Electric Charge Swap-symmetry as a starting point, this compilation show that ordinary and non-regular leptons are related by the ECS-rotational SO(3) group. By considering the ECS-Hamilton quaternions for leptons, the authors find that the SU(5) Grand Unified Theory originates from the image of normalized quaternions group N(Q8) under the ECS-rotations. The differential cross-section corresponding to a dispersion process in the context of the 331RHν model is calculated in order to use the results in terrestrial and astrophysical experiments. The differential cross-section is written in terms of the mass of the new gauge boson Z′, the mixing angle, the magnetic moment of the neutrino, and the charge radius. In closing, the authors obtain analytical expressions for the total cross section of the process $e^+e^− \rightarrow \tau^+\tau^−\gamma$ in the context of the B-L model. The total cross section is analyzed in terms of the mass of the new gauge boson Z′, the mixing angle θ of the B-L model, the magnetic moment and the electric dipole moment of the $\tau$-lepton.

### Scalar Strong Interaction Hadron Theory II

**Fang Chao Hoh** (Uppsala, Sweden)

In series: *Physics Research and Technology*


The current theory for strongly interacting elementary particles QCD cannot account for low energy phenomena. The present theory described in this book aims at replacing low energy QCD and has far more predictive power. Equations of motion for mesons and baryons are proposed, accounting for many basic mesonic data and, presently, a few baryon data. It is supposedly still at its early stage of development.

### Quantum Theory

### Introduction to Micromechanics (Second Edition)

**Khanh Chau Le** (Institute of Mechanics, Ruhr University Bochum, Bochum, Germany)

In series: *Classical and Quantum Mechanics*

2020.

Hardcover: 978-1-53616-558-6. $195.00.


This is a clearly written introduction to micromechanics for graduate students of mechanical engineering and material science. The textbook contains the rigorous theoretical basis for mechanics of materials as well as a large number of examples, numerical simulations of practical importance, and exercises in phase transition, fracture mechanics, dislocations, homogenization, and plasticity.
In Electron Gas: An Overview, the results of theoretical studies of the thermodynamic, kinetic, and high-frequency properties of the electron gas on the surface of a nanotube in a magnetic field in the presence of a longitudinal superlattice.
are presented. Following this, an interpretation of the basic transport characteristics of metals, superconductors in the normal state, and very strongly doped semiconductors with degenerate electron gas is presented. An application of the effective density of randomly moving electrons allows for an explanation of the conductivity of metals, and the electron transport characteristics such as the average diffusion coefficient, the average mobility, the mean free path, and the electron scattering mechanisms in a wide temperature range. Finally, the authors demonstrate high-performance InGaN-based light-emitting diodes with tunneling-junction-induced 2-D electron gas at an AlGaN/GaN heterostructure, which is inserted in the middle of the P++-GaN contact layer of a conventional LED structure.

Macroscopic Quantum Phenomena in Spintronics

Herbert P. Simanjuntak (Departemen Fisika, Universitas Indonesia, Depok, Jawa Barat, Indonesia)

In series: Physics Research and Technology
2019.
Softcover: 978-1-53616-132-8. $82.00.
e-book: 978-1-53616-133-5. $82.00.
Although the discussion is general, this book focuses on the problem of macroscopic quantum phenomena using systems of spintronics. The spintronics considered are ferromagnetic and antiferromagnetic spintronics. To represent the macroscopic quantum phenomena in spintronics, transitions from one state to another of the magnetization of ferromagnetic spintronics are considered, and of the Néel vector of antiferromagnetic spintronics. The authors have studied transitions from a metastable state to a more stable one, as well as quantum coherence between two degenerate stable states. Quantum and classical rates of transitions are presented as functions of temperature, magnetic field and the spin-polarized current flowing through the spintronics. With this method, one can immediately observe the effect of the spin-polarized current on the transitions of the magnetization and the Néel vector when comparing the results to those of the earlier ones on magnetic systems that did not have spin-polarized current. Specifically, while dissipations in magnetic system are intrinsic, the book shows how the total dissipation in spintronics can be controlled and eliminated by varying the spin-polarized current appropriately that depends on the temperature. The study of transitions from a metastable state to a more stable one in ferromagnetic spintronics shows that the rate of transitions of the magnetization at low temperatures is low and vanishes at zero temperature, so that the magnetization is relatively more stable than that in ferromagnetic materials without existence of spin-polarized currents. In the case of antiferromagnetic spintronics, the behavior and characteristics of transitions of the Néel vector is in contrast to those of ferromagnetic spintronics, where the low-temperature rate of transitions in antiferromagnetic spintronics varies exponentially small in temperature, and is finite and non-vanishing at zero temperature. In addition to the theoretical aspects, the book also discusses experimental and technological aspects that one may obtain. Measurements of the rate of transitions can be used to provide an independent method to determine certain parameters being involved, such as the anisotropy parameter Kc of tetragonal crystals, which is an important parameter but usually difficult to obtain. Eliminating dissipation in ferromagnetic and antiferromagnetic spintronics would be desired so as not to have unnecessary loss of energy. Low rate of transitions corresponds to the initial state that is relatively stable. Technologically, the stability of the states of the magnetization and Néel vector in spintronics are important, for example, for memory storage.

Spintronics: A Review and Directions for Research

Arthur R. Hampton

In series: Physics Research and Technology
2019.
Softcover: 978-1-53614-526-7. $95.00.
e-book: 978-1-53614-144-1. $95.00.
This compilation first presents a brief literature overview of ferromagnetism in zinc oxide, as well as a survey on ion implantation and irradiation-mediated ferromagnetism. The authors highlight the intrinsic and extrinsic origins of ferromagnetism in 200 KeV Ni+2 ion implanted ZnO (Ni: ZnO)/undoped ZnO. The authors also discuss spin dynamics studies that have been carried out on graphene-based derivatives such as graphene-like nano carbon, nitrogen derivative graphene-like nano carbon, reduced graphene oxide and tellurium-incorporated reduced-graphene oxide for using electron spin resonance. Lastly, Spintronics: A Review and Directions for Research establishes the inducing of spintronic behaviour in a semiconductor-based multiferroic material, BiFeO3, through the site-engineering approach. The unique electronic band structure of a spintronic material with 100% spin polarization impacts the electron transport mechanism significantly, with an increase in the efficiency in the performance of memory storage devices.
A Closer Look at Biomechanics
Daniela Furst
In series: Physics Research and Technology
Sofcover: 978-1-53615-866-3. $95.00.
e-book: 978-1-53615-867-0. $95.00.
The research presented in the opening chapter of A Closer Look at Biomechanics demonstrates that the use of finite element modeling to simulate static and dynamic behavior in an anterior cervical plate design shows that load transmission is superior when the plate works dynamically. The second chapter continues to examine the purpose of simulate static and dynamic behavior with the same anterior cervical plate design in two different clinical scenarios: in the immediate postoperative state and after simulated graft subsidence by means of biomechanical assays. There are contradictory results from previous studies on the effects of laterality on walking, such as the existence of symmetry or asymmetry as well as the role of the dominant leg. Thus, the effects of laterality on walking asymmetry during walking on a treadmill is examined in this compilation. The penultimate chapter discusses the localization of the body’s center of mass and how that helps in the analyses of sport technique, while information on moment of inertia helps in explaining body angular movements. The final chapter aims to show how the large number of pedobarographic parameters, which vary from 72 to 198 per foot, can be aggregated into a single indicative parameter: the Relative Midfoot Index. This indicates that clinicians do not have to analyze hundreds of pedobarographic parameters in order to reach a meaningful interpretation.

A Closer Look at Dark Energy
Davood Sadatian (Department of Physics, Faculty of Basic Sciences, University of Neyshabur, Neyshabur, Iran)
In series: Advances in Astronomy and Astrophysics
2019.
e-book: 978-1-53616-349-0. $160.00.
The universe is in a period of accelerated expansion; and the observational evidence such as supernova of Ia type, Cosmic Microwave Background radiation (CMB) and Baryon Acoustic Oscillations (BAO) confirm this accelerating expansion [1-3]. Despite the great number of observational evidence, the responsible mechanism for this accelerating expansion is still unknown, and thus several models have been proposed for this phenomenon[4-18]. The simplest proposed model in the general relativity is a cosmic model with a dominant component that is considered as a fluid with negative pressure and constant density[8] (means Dark Energy component) . In this book, we consider effects of Dark Energy content on the universe. Accordingly, structure of discussions in the present book was on four chapters as follows: chapter 1: Dark Energy, Motivation and Candidates, chapter 2: The Equivalence Principle Applicability Boundaries, Measurability, Gravity and Dark Energy Problem, chapter 3: The Behaviors of a Candidate for Dark Energy from ur-Higgs Boson , and chapter 4: Non-equilibrium Evolution of Quantum Fields During Inflation and Late Accelerating Expansion. However, I hope this collection of context will be useful for readers to understand more accurately the dark energy idea.

A Comprehensive Guide to Angular Momentum
Opal Gordon
In series: Physics Research and Technology
Sofcover: 978-1-53615-707-9. $82.00.
e-book: 978-1-53615-751-2. $82.00.
A Comprehensive Guide to Angular Momentum begins by considering substantiations of the theorem of angular momentum change and the law of conservation of angular momentum, as the change of angular momentum indicates an error in the method of calculating the dynamics of the Solar system. Following this, different techniques for the analysis of the orbital angular momentum of electromagnetic fields are reviewed and discussed, describing their main advantages and disadvantages, and providing key ready-to-use methods for detection. The concluding chapter provides a theoretical explanation of photonic orbital angular momentum and explains its distinction from atomic orbital angular momentum. Global conservation of angular momentum implies that light must transfer not only its spin, but also its orbital angular momentum in order to matter.
between matter and energy becomes not so obvious. Quantum Mechanics was developed based on the assumption that matter and energy may be different characteristics of a physical system and "equi... between physical processes, and ideas inspired by firsthand experience penetrating elusive realms. In the frame of the new curve by understanding such phenomena and developing new theoretical models and predictions, before the coming surge... covered in this book, certainly counts as odd. There is now a small window of opportunity... recent discovery that the world may be two... dimensional reduction, and Weyl's modification of Einstein's general relativity. Isaac Asimov said, "The most exciting phrase to hear in science, the one that heralds new discoveries, is not, E... the renormalization group, Weinberg's asymptotic safety scenario, causal dynamical triangulations, spontaneous dimensional reduction, and Weyl's modification of Einstein's general relativity. Isaac Asimov said, "The most exciting phrase to hear in science, the one that heralds new discoveries, is not, Eureka! I've found it, but, that's odd!" The recent discovery that the world may be two-dimensional at extremely small distances, which is one of many striking results covered in this book, certainly counts as odd. There is now a small window of opportunity in which to get ahead of the curve by understanding such phenomena and developing new theoretical models and predictions, before the coming surge of experimental results.

Old Problems and New Horizons in World Physics
Volodymyr Krasnoholovets, Ph.D. (Department of Theoretical Physics, Institute of Physics, National Academy of Sciences of Ukraine, Ukraine), Victor Christianto (Satyabhakti Advanced School of Theology - Jakarta Chapter, Indonesia) and Florentin Smarandache, Ph.D. (Department of Mathematics and Sciences, University of New Mexico, New Mexico, USA)
In series: Physics Research and Technology
Written by 13 contributors from different regions of the World, this book is a collection of papers written by researchers who have been working toward defining new concepts in the sciences for years. Among the new approaches, new views have been developed based on the emerging mathematical principles, the observation of possible relationships between physical processes, and ideas inspired by firsthand experience penetrating elusive realms. In the frame of the new explanatory theoretic models, matter and energy may be different characteristics of a physical system and "equivalse... between matter and energy becomes not so obvious. Quantum Mechanics was developed based on the assumption that...
electron mass is constant. Variable electron mass automatically rules out the entirety of quantum mechanics. Electron mass can change during chemical and biological processes and then other characteristics modify correspondingly. It is accepted that the Special Theory of Relativity (STR) does not contradict quantum mechanics, but in reality, the opposite is true. Even for a non-rocket scientist, this contradiction becomes evident with the simplest analysis of energy mass and energy equivalence formula. In simple words, the formula assumes that if energy is quantized, mass must be quantized too. How do atomic particles know how much mass to convert into energy and keep the same proportion in the conversion? Maybe one proton or one neutron converts more mass than his neighbor does? If protons and neutrons can be fragmented and divided using the MeV energy order, then why do we need CERN or other large nuclear facilities? Contributors of this volume: • George Shpenkov. Institute of Mathematics & Physics, UTA, Bydgoszcz, Poland. • Leonid Kreidik. Minsk, Belarus. • Volodymyr Krasnolohovets. Senior Research Scientist, Department of Theoretical Physics, Institute of Physics, National Academy of Sciences of Ukraine. Kyiv, Ukraine. • Victor Christianto. Malang Institute of Agriculture (IPM), Indonesia. • Florentin Smarandache. Chair of Mathematics and Sciences, University of New Mexico, New Mexico, USA. Gallup, New Mexico 87301, USA. • Robert Neil Boyd. Consulting physicist for Princeton Biotechnology Corporation, Dept. Information Physics Research. • Adrian Klein. Cognitive neuropsychology, PhD Metaphysical sciences, Parapsychological Association, ECAO, ISPE, IQN, AAPS, AAAS. Affiliation: ECAO Aff., Israel. • Akira Kanda. Professor of Mathematics and Logic. Omega Mathematical Institute. • Mihai Prunescu. University of Bucharest. • Renata Wong. Nanjing University, China. • Anand Biehl. Toronto, Ontario, Canada. • Arnold Gorgels. Mathematical Physics, Institute in Potsdam, Member DPG, Germany • Ying-Qiu Gu. School of Mathematical Science, Fudan University, China.

Teensy Weensy Universe
Peter Gara (Budapest University of Technology and Economics, Hungary, Budapest, Műegyetem)
In series: Classical and Quantum Mechanics
2020.
Softcover: 978-1-53616-516-6, $82.00.
e-book: 978-1-53616-563-0, $82.00.
Works on quantum mechanics (astronomy, cosmology etc.) often mention that “the laws of quantum mechanics” don’t apply in the “macro world”. It all depends on what you mean by “macro world”. How many atoms constitute the limit, just a couple of them, or a glass of milk, a sizeable house, a city, a continent? Instead, let’s dream big, the whole Planet, maybe a few answers in the book. My m...
The Heavens Above: A Popular Handbook of Astronomy
J. A. (Joseph Anthony) Gillet and W. J. (William James) Rolfe
In series: Physics Research and Technology
It has been the aim of the authors to give in this book a brief, simple, and accurate account of the heavens as they are known to astronomers of the present day. It is believed that there is nothing in the book beyond the comprehension of readers of ordinary intelligence, and that it contains all the information on the subject of astronomy that is needful to a person of ordinary culture. The authors have carefully avoided dry and abstruse mathematical calculations, yet they have sought to make clear the methods by which astronomers have gained their knowledge of the heavens. The various kinds of telescopes and spectroscopes have been described, and their use in the study of the heavens has been fully explained.

Aircraft Electronic Warfare: A Memoir by a Project Engineer
John Edward Waters (Project Engineer, Toms River, NJ, US)
In series: Aircraft and Avionics Research and Technology - New in 2019
There are many books written by editors about Electronic Warfare. This book is written by an author about his Electronic Warfare systems projects, tasks and stories. He was a project engineer for Electronic Warfare systems for more than twenty-five years and a consulting engineer for other systems for five years. The book contains 61 stand-alone chapters with 63 mostly color illustrations and 35 stand-alone addenda without illustrations. There are chapters that report his special projects with the Joint Special Operations Command, the Space & Missile Systems Center, NASA, the Navy SEALS, the CIA, the Army Delta Force, and the Army Missile Command. His actions as an undercover agent for a national crime fighting agency are mentioned. He explains why he expedited a contract award for 2,000 radar locator systems, (AN/APR-39), then had them installed in Army helicopters before the possible start of World War III. An invitation to visit the White House then a productive outcome as a result of that meeting. A second invitation when his daughter was a White House volunteer. His trip to Thailand to evaluate the USAF latest radar warning receiver for possible use on Army fixed wing aircraft. He explains why he was not allow to deplane after landing in Vietnam. His proposal for a barrier on the Mexican border. A few stories about his son Colonel John (Jay) Waters. One includes Jay’s story about when he was on the general’s staff in Afghanistan. The unique action taken by their general that stopped the mortar firings into Bagram Army base. A story about his friend Leonard Lomell, who a historian called the person most responsible for the success in the D-Day invasion. Second only to General Eisenhower. A ten-day visit to the Normandy beaches and cemeteries with Jay when he was the military head of Arlington National Cemetery and all world-wide Army cemeteries. Nap-of-the-Earth flight tests while flying over the Chesapeake Bay. My pilot was a POW in North Vietnam. What he told me about Jane Fonda. A flight test across the Fulda Gap in Germany to detect enemy radars. What his pilot told him about a young couple who tried to cross the border. Then a flight test along the DMZ in North Korea and a special test in England against a new radar. A report about a helicopter unable to return to the airport due to a dense fog. How his on board radar locator assisted the pilot to return to the airport. When Ayatollah Khomeini became the ruler of Iran, students attacked the American Embassy. They held many Americans prisoners. We attempted a rescue mission, but two of our aircrafts collided in the Iranian desert and the mission was aborted. The world knew about that failed mission, but the world never knew about the second United States rescue mission. He was a technical advisor for the second rescue mission.
Construction


Linda Zikhona Linganiso (Senior Lecture, Department of Chemistry, Faculty of Science and Agriculture, University of Zululand, KwaDlangezwa, KwaZulu Natal Province, South Africa) and Tshwano Elias Motaung (Associate Professor, Department of Chemistry, Faculty of Science and Agriculture, University of Zululand, KwaDlangezwa, KwaZulu Natal Province, South Africa)

In series: Construction Materials and Engineering


Hardcover: 978-1-53614-995-1. $230.00.

The concept of a circular economy in the construction sector captures global material flow through product design, inverse logistics, innovation and collaborations. The circulation of the economy takes into consideration global influence, which affects the economy through a variety of construction product flows in particular. The increase in consumers means increasing product and services which participate in different waste streams. The emerging sustainable development in the construction industry requires the recycling of waste materials to reduce the negative environmental impact of construction activities. Accumulation and management of construction wastes is also becoming a major environmental and economical concern in many developing countries. Huge volumes of waste generated end up piled on landfill sites or illegally dumped, posing serious health and ecological problems. In the construction industry, recycling of waste concrete, masonry, cement, gypsum, to mention but a few, has become an important aspect due to the continued increase of construction wastes and depletion of natural aggregates. Why not establish a business system that is specifically designed to do much more value addition to the construction wastes and develop products which are not only in demand locally but internationally, to encourage exports for maximum financial gain. This book aims to analyze the current business model in the construction sector and the current legislation concerning waste management. It also highlights efforts required in order to refine the recycling methods in favor of a circular economy in the construction industry. In support of a transition to a low carbon economy, different types of materials which can be produced from the construction wastes are indicated including processes which are used to obtain the final products. The market demand including penetration of the resulting products are given extensively. Policies and regulations to govern these undertakings are highlighted also. The municipalities will learn to redirect the local construction industries on how to avoid dumping at landfill sites as the space has currently become an issue. Researchers globally will learn how to go up through the Technology Readiness Levels (TRL) from basic research through prototype development and finally up to commercialization in projects related to the construction.

Electrical Engineering

Providing Reliable Operation of Electric Networks

Alexander Yu. Khrennikov (Scientific & Research Centre of Federal Grid Company, United Energy System, Moscow, Russia), Alexey A. Kuvshinov (Togliatti State University, Togliatti, Russia) and Igor A. Shkurupat (Electroshield – TM, Samara, Russia)

In series: Electrical Engineering Developments


Hardcover: 978-1-53615-422-1. $230.00.

This book presents theoretical and practical aspects of providing reliable electrical network operation by 6 – 500 kV voltage. The topics covered includes semiconductor systems for de-icing overhead transmission lines, dispatching solutions in power systems by expert systems, partial discharge diagnostics, electrodynamic testing of reactors, an investigation of technological breakdowns with damage to power transformers, perspectives for using photothermists, IGCT and IGBT for electrodynamic, programmable static converters for intelligent electrical networks, and digital current transformers for digital substations. Chapter 1 describes the serious problem of glacial deposits on overhead transmission lines during the autumn-winter period. One of the methods to combat this is melting the glacial deposits on alternating current lines by creating short circuits, or direct currents using uncontrolled or controlled rectifier blocks. Chapter 2 discusses the expansion of the Automatic Dispatch Control System for substations and electrical networks using intelligent subsystems based on the technology of expert systems. Chapter 3 presents an application’s experience with
monitoring the electric activity of the partial discharges into the insulation of transformers, data on electrical tests in autotransformer windings, and testing XLPE cables. Chapter 4 shows the thermal and electrodynamic tests of reactors on the reliability and durability of windings during the passage of short-circuit currents, serving as a tool for improving the reliability of their design. Chapter 5 investigates a technological breakdown with damage to power transformers, which is a difficult task, and is performed to improve the reliability of the power supply. Chapter 6 shows diagnostic and mathematical models of the windings of the high-voltage transformers and reactors. Mathematical models of winding radial and axial deformations are also calculated. Chapter 7 provides the comparative characteristics of switching capabilities of phototyristors, lockable thyristors IGCT, and high-power transistors IGBT, taking into account the specific operating conditions in the composition of the high-voltage high-current semiconductor key (HHCSK) during electrodynamic tests. In Chapter 8, the author considers the basic operations of implicative algebra for the choice of the logical-algebraic modeling of static converters, provided that the objective and predicate variables are identified with the parameters of the energy and information processes. Chapter 9 presents controlled reactor-transformers with reduced high current harmonics and the calculation of parameters of the active parts of transformers. Finally, chapter 10 presents the results of designing a device for calculating the current on digital current transformers, based on the Faraday Effect. This book is based on the author’s previous research, including more than 240 scientific and technical publications.

Electronics

Adaptive Filtering: Principles, Concepts and Applications
Md. Zia Ur Rahman, Ph.D. (Department of Electronics and Communication Engineering, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, Guntur, A.P., India)
In series: Electronics and Telecommunications Research
Hardcover: 978-1-53614-783-4. $160.00.
This book titled Adaptive Filtering: Principles, Concepts and Applications covers principles, concepts and applications of adaptive filtering. The development of adaptive filtering started in 1976 and widely developed over different application areas. It is certainly not our ambition to cover everything of adaptive filtering principles and applications. Rather, this edited book features the latest methodological, technical and practical progress on promoting the successful use of adaptive filtering principles and applications, which are more useful in the current day scenario. The book contains ten chapters contributed by the experts in the area of adaptive filtering throughout the world.

The various applications addressed are MIMO receivers, adaptive exon prediction for DNA analysis, beam steering for smart antennas for mobile applications, telecardiology systems, physiological signal analysis, brain computer interface applications, speech signal conditioning, filtering thoracic electrical bio-impedance, and inter symbol interference cancellation in wireless communication systems. The intended audience of this book will mainly consist of researchers, research students and practitioners in adaptive filtering and applications. The book is also of interest to researchers and industrial practitioners in areas such as algorithm developers, biomedical engineering, biomedical instrumentation, VLSI circuits design, and embedded systems. This edited book will present research outcomes on theoretical and technical issues related to real time applications.

Recent Advancement in Electronic Devices, Circuit and Materials
Suman Lata Tripathi and Sanjeet Kumar Sinha (Lovely Professional University, Phagwara Punjab, India)
In series: Electronics and Telecommunications Research
2020.
Softcover: 978-1-53616-556-2. $95.00.
This book deals with some emerging semiconductor devices and their applications in terms of electronic circuits. The basic concept plays a key role in development of any new electronic devices and circuits. The implementation of complex integrated circuits becomes easier with understanding of basic concepts of solid state devices and its circuit behavior. The book covers the latest trends in development of advanced electronic devices and applications for undergraduate, graduate and post graduate level courses. It combines the right blend of theory and practice to present a simplified and methodical way to develop researchers’ understanding of the clarity between theoretical, practical and simulated results in the analysis of solid state devices, circuit characteristics and other important issues based on their applications. The book also covers the broad applications of electronic devices in biomedical and low power portable smart IOT systems. This book is well organized into 13 chapters. Chapters 1 to 4 cover design of low power FET devices compatible to technology scaling trends meeting required performance enhancement in terms of power, delay and speed. Chapter 5 and 6 are focused on analog application of CMOS technology. Chapter 7 describes power MOSFET design with advance materials for lowest possible on-resistance resulting into enhance performance. Chapter 8 deals with biomedical application of advance
electronic devices introducing new materials and structure. Chapter 9 introduces a neuromorphic model and real-time simulation for the study of biological neuron model in the human body on circuit level. Chapter 10 and 11 presents the applications of sensors growing over a wide range of sensing targets along with advance sensing technology for human-computer interaction. Chapter 12 and 13 describe optoelectronic devices like photodetectors, optical sensors and solar cells etc.

Smartphones: Recent Innovations and Applications
Paolo Dabove, Ph.D. (Politecnico di Torino, DIATI, Department of Environment, Land, and Infrastructure Engineering, Turin, Italy)

In series: Electronics and Telecommunications Research
Hardcover: 978-1-53615-830-4. $195.00.

Smartphones are mobile devices that perform many of the functions of a computer, typically having a touchscreen interface, Internet access, and an operating system capable of running downloaded apps. It is neither possible to cover all research fields where smartphones are used nor to describe all possible applications where smart devices are used. This book wants to highlight a selection of restricted contributions in the emerging research fields where smartphones can be used for innovative approaches. Then, this book is meant for academic researchers, engineers and for others who want to find out more about smartphone emerging technologies and future applications.

Energy

Advances in Energy Research. Volume 31
Morena J. Acosta

In series: Advances in Energy Research
2019.
Hardcover: 978-1-53616-271-4. $250.00.

In the past, fossil fuels have been considered a reliable source of energy by many countries. Despite the current measures to reduce the use of fossil fuels for electricity generation, the use of this type of energy source will continue for the foreseeable future. Advances in Energy Research. Volume 31 examines how, if this situation does not change in the future, then all types of fossil fuels, particularly oil, will be exhausted before the end of the current century. The use of microholes may potentially enhance the applications of fossil fuels in various energy fields, especially in thermal power plants. Therefore, the morphology variation of micropunch and microhole during the punching with WC/Co micropunches is investigated in this compilation through scanning electron microscopy, energy dispersive spectrometer and confocal laser studies. Following this, the authors provide a review on experimental and modeling studies performed with direct fuel cells, starting with the fundamentals and main drawbacks of these systems, followed by an exhaustive review on the different studies performed regarding the effects of operating conditions and design parameters. In the penultimate chapter, a new method for determining the cohesion potential energy in solids is described, and fundamental factors such as internal energy, entropy, temperature and time are examined, in particular the connection of entropy and time to potential energy. The method concerns molecular solids and rests upon measurable thermodynamic quantities: heat of sublimation, heat capacity, and entropy as derived from the latter. The closing chapter provides an overview of three methods (retarded osmosis method, forward osmosis-electrokinetic method, and diffusio-osmotic method) for sustainable power generation from the salinity gradient energy by using osmosis-based processes.

Can Biofuels Alleviate the Energy and Environmental Crisis?
Indra Neel Pulidindi and Aharon Gedanken (Department of Chemistry, Bar-Ilan University, Ramat Gan, Israel)

In series: Energy Science, Engineering and Technology
Hardcover: 978-1-53615-050-6. $195.00.

Climate change is one of the major challenges society is facing currently. Major spheres of human activity such as health, environment, agriculture, economy, transportation and education were adversely affected because of climate change. Environmental pollution owing to the indiscriminate and ever-increasing consumption of fossil-based resources is the main factor contributing to climate change. Use of fuels produced from renewable sources like biomass cause reduction in CO2 emission and guarantee sustainable energy
and a clean environment. The problems of environmental deterioration, as well as energy demands, could be alleviated by the paradigm shift to the use of biofuels from fossil fuels. Innovative strategies were recently developed for the exploitation of biomass for biofuels production. The concept of biomass itself is becoming understood in an unconventional sense in a way that apart from terrestrial plant resources, marine macroalgae, freshwater microalgae, industrial emissions like CO2, organic remains like glycogen are being explored as feedstock for biofuels production. Biofuel production strategies are also undergoing drastic changes like the use of solar radiation, sonochemical, microwave and accelerated electron beam irradiations to meet the fuel demand and to make the biomass conversion processes more energy- and atom-efficient and sustainable. The objective of the compilation of the book titled “Can Biofuels Alleviate The Energy & Environmental Crisis?” is to reach out to policy makers, scientists, industrialists, and students with a message as well as scientific strategies for alleviating the twin problems of energy and environmental crisis posing a threat to future generations. The book comprises of seven judiciously designed chapters focused on producing biofuels (biodiesel, bioethanol, formic acid, synthesis gas, methane, and ethylene) and biochemicals (glucose, levulinic acid) using feedstock as diverse as lignocellulosic terrestrial biomass, marine macroalgae, glycogen, and CO2. Biomass is an ideal substitute to fossil mass as almost all the products derived from conventional refinery could be produced in a biorefinery using biomass as a carbon source. In addition to being sustainable, the biorefinery facilities are environmentally benign. The biomass conversion strategies proposed in this book facilitate the paradigm shift from fossil-based to bio-based industries and help the proliferation of biorefinery facilities in the 21st century, offering a pathway for the alleviation of the problem of climate change.

**Perovskite Solar Cells: Properties, Application and Efficiency**

*Murali Banavoth, PhD (School of Chemistry, University of Hyderabad, Hyderabad, Telangana, India)*

**In series: Renewable Energy: Research, Development and Policies**


Hybrid organic and inorganic perovskites (HOIP) have shown remarkable progress since the first realization of efficient PSCs with a PCE of 3.9% in 2009; the record PCE reached 23.3% in 2018. The next step will undoubtedly be developing scale-up techniques for transitioning small-area devices to large-area modules. Most books outline only the basic theoretical background, fabrication methods and/or applications. To bridge the gap between academia and industry, a profound understanding of the recent advancements in the HOIPs field is necessary. Experts’ insights in this book present an in-depth overview of information regarding the materials synthesis methodologies, effects of dopants, optimized optoelectronic properties, suitable deposition methods, engineering and improving the stability of various device architectures using printing methods for flexible large-area PSC modules, including the module concept, discuss various challenges and issues that can open the door for the researchers towards commercialization of durable perovskite solar cells. Moreover, this book also covers the developments on the zero-, two-, and three-dimensional non-toxic perovskite/non-perovskite materials, the radiation degradation of solar cells, the synergistic effects of cooperative phenomena in tandem systems and provide some recommendations to overcome the challenges for improving the photoconversion efficiency.

**Solar Energy Systems: Progress and Future Directions**

*Michala Rybodá*

**In series: Energy Science, Engineering and Technology**

2019.

Softcover: 978-1-53616-142-7. $82.00.
e-book: 978-1-53616-143-4. $82.00.

Solar Energy Systems: Progress and Future Directions presents some new concepts and ideas regarding future steps in the development and progress of solar thermal energy. Preliminary results for advanced control of solar plants are presented using effective defocusing mechanisms. The authors discuss the sizing ratio of grid-connected photovoltaic systems and the relationship of this parameter with the maximum available power. Additionally, the optimum value of the sizing ratio of a grid-connected photovoltaic system is defined as one that maximizes the yearly energy efficiency in the photovoltaic installation considered. The concluding study makes a comparative econometric analysis on the relationship between the solar energy consumption that is produced by solar energy systems and the economic growth for the group of G-7 & G-20 countries. The econometric analysis includes panel data techniques with a chosen appropriate production function.
Spacetime Energy: A Twenty First Century Perspective
B. G. Sidharth (Director, B. M. Birla Science Centre, Adarsh Nagar, Hyderabad, India)
In series: Energy Science, Engineering and Technology
e-book: 978-1-53615-586-0. $160.00.
The anthology titled “Spacetime Energy: A Twenty First Century Perspective” encompasses novel and avant garde ideas that delineate the intrinsic nature of spacetime and several of its aspects. The collection of papers epitomizes the fundamental aspects of the physical world. For instance, the authors have considered the affine connection between gravitation and electromagnetism. The noncommutative nature of spacetime has also been elaborated in connection with gravitation and electromagnetism and also in terms of monopoles. On the other hand, the rudimentary nature of the zero point field or the field of the vacuum has also been considered to describe the 2-state asymmetries that are found in nature. Several interesting models have been considered to get a novel perspective on the nature of the universe we live in; the importance of dark energy has been implied therein. The authors have also considered the phenomenon of photoelectric effect in case of graphene and other similar crystals. A new formula has also been found for the conductance in case of carbon nano tubes. Ultra-high energy fermionic behavior has been elaborately discussed from a novel perspective and the anomalous gyromagnetic ratio of the electron has also been elucidated on the pedestal of the noncommutative nature of spacetime. Resorting to an altogether different approach, the nature of symmetry breaking and the details related to the relevant Lie algebras has also been discussed. Essentially, the collection of works provides a broad range of conceptual understanding of the universe, both in the macroscopic and the microscopic scale. Nevertheless, the reader should find the works to broaden their view of the physical world that exists around us.

The Future of Energy: Prospective Scenarios on EU-Russia Relations
Carla Fernandes (Departamento de Estudos Políticos, Universidade NOVA de Lisboa, Lisboa, Portugal) and Teresa Rodrigues (Portuguese Institute of International Relations, NOVA University, Lisbon, Portugal)
In series: Energy Policies, Politics and Prices
This book presents the main conclusions reached by the academic project “Geopolitics of Gas and the Future of the Euro-Russian Relations (Geo#GER).” This project is being developed at IPRI—Portuguese Institute of International Relations, NOVA University, an academic research institute dedicated to advanced studies in Political Science and International Relations, of NOVA University of Lisbon, Portugal. Energy security is a key issue on the international political agenda, a prerequisite for political stability and economic development and an indivisible part of a state’s overall security. For Europe, the high-energy insufficiency is a major challenge, given its dependence on external sources, especially from Russia, the lack of diversification of energy sources, and the poor branch of its transmission network. For Russia, energy has been a geopolitical factor of power and a potential strategic vector to its re-emergence as a great power in the international system. However, in terms of energy, Russia also faces some long-term challenges, given the fall of its production and the low competitiveness of its gas, which is currently saved from the market where competition can hardly enter. Given this scenario, and also the increasingly important role in the political and strategic discussion of energy issues between Europe and Russia, it becomes relevant to diagnose the past and the present to forecast the medium and long term future (2030), taking into account the expected changes in the geopolitical and energetic environment, and the characteristics and dynamics of European-Russian relationship, including its energy interdependence and the energy policies and strategies outlined by Europe and Russia.

The Renewable Fuel Standard: Overview and Implementation Issues
James Mcdonald
In series: Energy Policies, Politics and Prices
Established by Congress as an amendment to the Clean Air Act, the Renewable Fuel Standard (RFS) mandates that U.S. transportation fuel contain a minimum volume of renewable fuel. The mandated minimum volume increases annually and
must be met using both conventional biofuel (e.g., cornstarch ethanol) and advanced biofuel (e.g., cellulosic ethanol). For a renewable fuel to be applied toward the mandate, it must be used for certain purposes (transportation fuel, jet fuel, or heating oil) and meet certain environmental and biomass feedstock criteria.

**Electrical Engineering**

**The Control of the Pumping Complex Electric Drive in Non-Steady Operation States**

Mykhaylo V. Zagirnyak, Tetyana V. Korenkova, Oleksandr O. Serdiuk, Oleksii M. Kravets, Viktoriya G. Kovalchuk (Kremenchuk Mykhailo Ostrohradskyi National University, Kremenchuk, Ukraine)

In series: *Electrical Engineering Developments*


Hardcover: 978-1-53615-017-9, $230.00.

Modern pumping complexes (PC) represent complicated power-consuming technological systems including one or several pumping units (PU) operating in parallel for the common manifold, a network of pipelines with the installed stop-control and safety valves. The presented monograph contains theoretical and experimental research on the improvement of energy efficiency and reliability of PC functioning with the use of the fundamental postulates of the classical theory of electrical engineering, hydrodynamics, electric drive, the methods of finite elements, approximation and optimization, and the theory of Fourier series.

**Renewable Energy**

**A Closer Look at Biodiesel Production**

Luisa Fernanda Rios Pinto, Érika Marques Takase and Harrson Silva Santana (School of Chemical Engineering, University of Campinas (UNICAMP), Campinas, São Paulo, Brazil)

In series: *Renewable Energy: Research, Development and Policies*


Hardcover: 978-1-53614-884-8, $230.00.

Biodiesel is considered a viable alternative to the use of fossil fuel, as it is a renewable and biodegradable fuel, providing many environmental benefits. A Closer Look at Biodiesel Production describes new prospects of biodiesel production and updates the different researches on raw materials for the production of new sources of biofuels. The book contains thirteen chapters that are divided into five sections for a better understanding for the reader. The first section presents an extensive and profound review of the fundamentals of biodiesel production and the application of heterogeneous catalysts in this process. The second section assesses the influence of the raw material and provides insight into non-conventional raw materials that can be used for biodiesel production, such as Macroinvertebrate Larvae and Wastewater Treatment Plant Sludge. The third section aims to present an extended discussion on biodiesel production from microalgae to feedstock. The third section shows the importance of the implementation of a biorefinery, using all microalgae products to make the processes economically viable. The objective of the fourth section was to apply modeling and simulation techniques that can assist in the design and assisted development of catalysts and methods for obtaining sustainable and ecological biofuels and to develop new separators of the co-products of the biodiesel production process. The last section is about the microbial conversion of crude glycerol to bioplastics and their building-block molecules. This book aims to provide an in-depth analysis and discussion of the basics of biodiesel production, developing new value-added biofuels and their biorefineries of possible products from an improved raw material. The target audience includes researchers, engineering design and biodiesel production facilities and graduates seeking a benchmark in biodiesel production.
Advances in Bio-Fuel Production
Anil Kumar (School of Biotechnology, Devi Ahilya University, Indore, India) and Sarika Garg (Director, Science Planet Inc., Canada)
Hardcover: 978-1-53614-671-4. $195.00.
Petroleum has played a crucial role in the socio-economic and political welfare of the world. It is a non-renewable form of energy and has an increasing demand in this modern era. To fulfill the demands, the conventional sources of oil reserves are being stressed and are nearly drought. Also, the burning of fossil fuel emits toxic gases contributing to environmental pollution and global warming. The concern about environmental deterioration helped scientists to invent ways to make bio-based products. These bio-based products can replace the use of gasoline, diesel, oil, plastics and much more. Among all the bio-based products, biofuel is the most noticed one for being humanity’s first liquid fuel. Biofuels are important for various reasons including reduced environmental impact, an alternative source of energy, and a boost in economic development. In this book, detailed production of biofuels from non-conventional bio-feedstocks and advanced biofuels production have been discussed.

Bioeconomic and Policy Aspects of Future Sustainable Biofuel Production
Shyamal Roy
Softcover: 978-1-53616-136-6. $82.00.
e-book: 978-1-53616-137-3. $82.00.
This book states developments in the bioenergy market and related policies. Recent bioenergy developments, often induced by policies, lead to a greater connection between energy and agricultural markets and influenced relative food and feed prices and land-use changes. An analytical framework is explained that places bioenergy within the bioeconomy. The impacts of supply push and demand pull policies are discussed, and the reasons for policy interventions are explained. The effectiveness of policy intervention is likely to increase if they are directly linked to a target such as the reduction of emissions or the stimulation of economic growth. Because the bioeconomy is an immature or infant industry, policies that temporarily encourage its development might be analyzed. Technological change and full biomass utilization for food, feed, energy, materials and chemicals may lead to a competitive bio-economy sector. Regulation can possibly deal with indirect effects of bioenergy such as social (land grabbing) and environmental effects (land, water, biodiversity). Given the importance of private sector investments in the development of biotechnologies, excessive regulation might create a disincentive to innovation.

Biogas: Production and Properties
James G. Speight (CD&W Inc., Consultant, Laramie, WY, US)
Hardcover: 978-1-53615-278-4. $230.00.
This book will introduce the reader to the fundamentals of biogas production, properties, and uses. The chapters focus on biogas as a renewable energy source, biogas production, the chemistry and engineering aspects of anaerobic digestion, landfill gas, biomass gasification, biogas upgrading technology, among other topics.
Ethanol as a Green Alternative Fuel: Insight and Perspectives
Helen Treichel (Federal University of Fronteira Sul, Erechim, RS, Brazil), Sérgio Luiz Alves Júnior (Laboratory of Biochemistry and Genetics, Federal University of Fronteira Sul, Campus Chapeco, SC, Brazil), Gislaine Fongaro (Laboratory of Microbiology and Bioprocesses, Federal University of Fronteira Sul, Campus Erechim, RS, Brazil) and Caroline Müller (Laboratory of Biochemistry and Genetics, Federal University of Fronteira Sul, Campus Chapeco, SC, Brazil)

In series: Renewable Energy: Research, Development and Policies

In face of the increasingly obvious need to ensure the sustainability of the environment, alternative and renewable energy sources are no longer just the concern of environmentalists and have become commitments of governments virtually everywhere in the world. In this context, ethanol emerges as an excellent substitute for petroleum derivatives. This green alternative fuel is sustained by its own burning because when CO2 serves as a carbon source for the growth of plants, it will allow the carbohydrates to be fermented. In addition, currently different generations of this fuel are being proposed, considering the utilization of their own waste. However, challenges still need to be overcome to enable the second, third and fourth generations of ethanol. At the same time, other renewable fuel alternatives emerge to compete with it. The automobile industry, for example, has been developing new engines, hybrids or not, that can be powered by electricity or H2. In this regard, this book addresses, under different aspects, the main strategies to surpass the remaining obstacles, as well as the advantages and disadvantages of ethanol as a fuel of the future. In this context, the “Ethanol as a Green Alternative Fuel” book shows present and future scenarios about bioethanol and perspective in their chain, considering the economic and environmental impact mitigations approach.

Industrial Technology

Globalization and the Changing Landscape of China’s Industrial Development
Yanqing Jiang (School of Economics and Finance, Shanghai International Studies University, Shanghai, China) and Wen Xu (School of Economics, Shanghai International Studies University, Shanghai, China)

In series: China in Transition

This book describes and discusses the various aspects of the changing “landscape” of China’s industrial development within the general context of globalization. In the past four decades, the spectacular economic growth and development of China has surprised the world. China has leapt from one of the poorest countries to the second-largest economy in the world. The development path of China’s economy is different from that of any other country, thanks to its unique national system. As a country that adopted the centrally planned economy in the past, the government played a very important role in the national economy. Even until now, government planning still greatly influences many aspects of the country despite the gradual perfection of the market system. Besides the government’s role, external factors coming worldwide can also be major driving forces behind the development of a national economy. For developing countries, industrial development is almost always the national priority. This book focuses its attention on the discussing of the evolution and development of China’s industrial structure under the general trends of globalization. It is always preferred that China can constantly strike a balance between its speed of overall economic growth and the soundness of the development of its industrial structure. In this book, we present the reader a true “landscape” of China’s industrial development that is changing and being constantly shaped by the various driving forces coming from the current trends of globalization. If you are one of the interested readers, we believe this book is one of the best choices for you.
Manufacturing

**Lean Manufacturing: Implementation, Opportunities and Challenges**  
*Francisco J. G. Silva (Department of Mechanical Engineering, ISEP - School of Engineering, Polytechnic of Porto, Portugal) and Luis Carlos Pinto Ferreira (Department of Mechanical Engineering, ISEP - School of Engineering, Polytechnic of Porto, Portugal)*  
In series: *Manufacturing Technology Research*  
Hardcover: 978-1-53615-725-3. $270.00.  
e-book: 978-1-53615-726-0. $270.00.  

The paradigm of manufacturing is undergoing a major evolution throughout the world. The use of computers, the Internet and new challenges related to the Industry 4.0 have changed the way we engineer and manufacture products. Improving production with Lean Thinking is an evolution of a traditional approach in order to improve its processes to remain competitive in the global market. Lean Manufacturing is a multidimensional approach that embraces a wide variety of management practices in a unified system. These practices contain quality systems, team work, and supplier management, among others. Nowadays, other practices have been adopted such as human factors and ergonomics. This book presents contributions of Lean Manufacturing applications in the world development and is intended to provide a comprehensive view of issues related to this area, with a specific focus on lean engineering principles; it is full of practical production examples of how Lean Thinking can be applied effectively to production systems. This work was conceptualized for an audience of graduate students mainly; however, it can also be consulted by engineers and company managers who seek state-of-the-art applications on Lean Manufacturing within a wide diversity of scenarios and conditions. The book, organized into 17 chapters, is intended to be an excellent source for dissemination of applied researches, lean concepts, and practices that have been successfully applied in the developing world domain. The book is also an excellent example of academy purpose with collaboration between different institutions from different countries that provide a global approach.
Scientific Research and Manufacturing: Potential India Growth Story
B.M. Suri (Bhabha Atomic Research Centre, Mumbai, India)
In series: India: Economic, Political and Social Issues
The inability of developing countries to charter a course for technology development and deployment, independent of developed countries, leads to a continued monopoly of developed countries in the high technology sector. This reality has pushed developing countries up a ladder of technology growth, and this book discusses how India should address these challenges. It will be interesting to witness how the narrative evolves in the context of the development of several potentially disruptive technologies, and the onset of the so-called industrial revolution 4.0. This challenge may manifest itself differentially for developing and developed countries, in regards to their contrasting levels of technology development, employment scenarios, and populations, but in this text, the unique challenges of India are analyzed. The challenge of disruptive technologies is daunting for a country like India, with a large, unskilled population. India symbolizes the types of problems which many developing countries face, but also provides hope and could act as a bridge between different levels of technology development. On one hand, the country’s workforce is known to be major provider of IT solutions to the developed world, and on other hand, it produces and exports cheap generic medicines to the world’s poorest countries. However, the challenge of disruptive new technologies is quite significant, and may necessitate a bold and imaginative response from its scientific establishments, STEM Higher Education system, industries, and policy makers. Policy makers may have to shed off some of their legacies and cultural mindsets to genuinely encourage innovation and attract as well as retain talent, even in the face of competition from developed countries. This book suggests that several developing countries facing similar technology or development challenges should join hands. Many of these closely interlinked issues are discussed, and the book aims to stimulate discussion between the diverse players such as those in the sciences, technology, STEM HE, Government policy making, entrepreneurship as well as and business.

Advances in Materials Science Research. Volume 37
Maryann C. Wythers
In series: Advances in Materials Science Research
Hardcover: 978-1-53615-038-4. $250.00.
Advances in Materials Science Research. Volume 37 begins by discussing the main properties of poly (methyl methacrylate) bone cements used for orthopaedic surgery. In particular, emphasis is given to the fillers used to modify the solid phase of acrylic formulations, and this strategy is related to changes in their mechanical, biological, and clinical properties. Following this, the authors describe studies on the radiopaque agents of bone cements from 1960 to today. This research is divided into several time frames: 1960-1990, 1990-2000, 2000-2010, and 2010-2018. An outlook for the future studies is also provided. A recent literature analysis in the field of spray pyrolysis production methods is presented, including the respective equipment requirements and the versatility of the materials. Examples of the application of ultrasonic spray nebulizers, laser and plasma atomizers are also provided. Next, a facile spray pyrolysis from a precursor solution with an ammonium additive is introduced to prepare porous nanostructured vanadium pentoxides. The correlation between porous structures and electrochemical properties of the PN-V2O5 electrodes was systematically investigated on rechargeable lithium batteries. Furthermore, some challenges are presented on the design of porous materials produced by spray pyrolysis for the application of lithium sulfur batteries. The authors discuss research on non-contact and non-destructive systems that excite surface acoustic waves using pulsed lasers and detect surface acoustic waves using laser Doppler detectors to observe the changes in the physical properties of the substrate surface. The concluding study focuses on the availability of modified epoxidized palm oil as pressure sensitive adhesives in medical applications. Epoxidized palm oil has been modified to two modifications of acrylation and maleination. Thus, there are requirements need to be met for pressure sensitive adhesive formulation before the curing process.
Advances in Materials Science Research. Volume 38
Maryann C. Wythers
In series: Advances in Materials Science Research
Hardcover: 978-1-53615-597-6. $250.00.
Chapter one of Advances in Materials Science Research. Volume 38, critically scrutinizes various recycling techniques implemented in the current scenario for the polyvinyl chloride based products. The second chapter focuses on the nanocomposite of an important type of thermoplastic polyvinyl chloride. Carbon nanomaterials have gained significant research interest as polymer reinforcement. polyvinyl chloride/nanocarbon nanocomposites possess excellent electrical conductivity, thermal stability, glass transition temperature, strength, toughness, modulus, and other physical properties. The authors of the following chapter highlight the essence of the flux growth method including fundamental aspects for crystal growth in solutions, choice of flux growth, and environmental applications to ion exchangers. Next, an eigenvalue-based technique for the characterization of a class of coaxial-line-to-waveguide adaptors that are used for material characterization is presented. The goal of the penultimate section is to investigate of magneto-thermoelectric effects in porous semiconductors. Thermoelectric and magneto-thermoelectric effects in porous materials possess very interesting improved properties compared to the bulk counterparts. In the closing chapter, the authors review different ways to induce and modulate porosity in non-cordierite honeycomb-type materials, based both in our own experience and that from other authors reviewing literature to date.

Dielectric Materials and Applications
Pankaj K. Choudhury, Ph.D. (Institute of Microengineering & Nanoelectronics (IMEN), Universiti Kebangsaan Malaysia, The National University of Malaysia, Selangor, Malaysia)
In series: Materials Science and Technologies
The book Dielectric Materials and Applications focuses on the recent research advancements in the area of dielectrics that can be utilized in a variety of technology-oriented applications. The topics covered in this book include the investigations of materials having low dielectric constants for Cu interconnects, a two-layer metalic waveguide as a tool to determine the complex permittivity of liquids and/or clinical diagnostics, microwave dielectric materials for the miniaturization of portable electronic devices, microwave assisted heating of dielectric and composite materials, and the dielectric properties of certain 3D nanocomposites. The other areas of discussion encapsulate the modeling of supershaped dielectric lens antennas, the roles of dielectric mediums in metamaterials to realize photonic devices ranging from absorbers, sensors and communication systems. Some of the chapters are purely experimental, whereas some others are based on modeling and simulation. Reading this volume truly remains key to understanding novel applications of dielectric materials in different areas of technological interest.

Proceedings of the 2018 International Conference on "Physics, Mechanics of New Materials and Their Applications"
Ivan A. Parinov (Vorovich Mechanics and Applied Mathematics Research Institute, Southern Federal University, Rostov-on-Don, Russia), Shun-Hsyung Chang, PhD (Department of Microelectronic Engineering, National Kaohsuing University of Science and Technology, Kaohsuing, Taiwan), and Yun-Hae Kim, PhD (Ex-Acting President of Korea Maritime and Ocean University, Director of Idea Factory Center, Yeongdo-gu, Busan, South Korea)
In series: Materials Science and Technologies
Hardcover: 978-1-53615-862-5. $230.00.
The developed original principles and approaches for advanced materials and composites (ferro-piezoelectrics, nanostructures, functional materials and polymeric structures etc.) defines the main achievements and directions of modern natural and technical sciences, technologies, techniques and industry. Direct improvement of the materials and devices characteristics are based on numerous chemical, physical and mechanical studies, modern numerical approaches and methods of mathematical modeling and physical experiment. These PHENMA 2018 proceedings are devoted to development and solution of different actual problems into framework of the above-
mentioned scientific directions. The proposed book presents interesting original results in theoretical, computational and experimental methods, which allow manufacturing nano-materials and composites (for example, ferro-piezoelectrical and environmentally-friendly), and other materials in different scale levels with before given and improved properties. The materials could be obtained due to reprocessing natural materials, wasters, fruits and plants. These proceedings also discuss results of mathematical modeling and experimental studies of advanced devices (piezoelectric transducers, energy-harvesters, different sensors, medical devices etc.). The presented studies are based on the new generation nano-materials, ferro-piezoelectrics and other structure-sensitive materials with special properties. The book treats promising modern nano- and microstructure techniques for manufacture of different novel materials (for example, nanostructures) and devices, which are very important for educational purposes and industry, unification and development of various expertises, designs and analyzes. The book presents new results of internationally recognized scientific teams in different areas of materials science, condensed matter physics, physical and mechanical theory and experiment, processing techniques and engineering of advanced materials and composites, numerical methods and numerous applications. These results are devoted to R&D of advanced piezo-ferroelectrics, nanostructures, other promising materials and composites with specific properties, based on the developed processing techniques and modern approaches of chemistry, physics, mechanics and materials science, and also wide spectrum of applications including industry and marketing. The book presents a wide spectrum of results, obtained on the base of original mathematical models, physical experiments, computer modeling, and nano- and piezoelectric applications. This collection presents 50 selected reports of the 2018 International Conference on “Physics, Mechanics of New Materials and Their Applications” (PHENMA 2018, August 9-11, 2018, Busan, South Korea). The book is addressed to students, post-graduate students, scientists and engineers, investigating and developing a new generation of nano-materials and nano-composites, piezo-ferroelectrics, other advanced materials with structure-sensitive properties, and also different devices, manufactured on their base and used in numerous applications in various areas of science, technique and technology. The book presents new research methods and scientific results in the condensed matter physics, materials science, physical and mechanical experiment, processing techniques and engineering of nanomaterials, piezoelectrics and other advanced materials and composites, numerical methods, and also different applications and developed devices.

Recent Studies in Materials Science

**Patrick R. Lind**

In series: *Materials Science and Technologies*


The goal of the first chapter is to express the main achievements in use of the Jahn-Teller effect (JTE) and pseudo JTE (PJTE) in search of materials with enhanced or novel properties, are presented as a part of what is known as materials science. The hallmark of this entire chapter is the commitment to identify situations in which “waves” are produced and provide a systematic classification of such convective instabilities together with a description of related features based on advanced numerical simulations. The quality and mechanical or electrical properties of the resulting solids and crystals are adversely affected by thermogravitational convection as it can induce defects in their atomic or molecular structure (this is the case, e.g., of typical crystal-growth techniques such as the horizontal Bridgman (HB), the Floating zone (FZ) or the Czochralski (CZ) methods). This present chapter aims to present a focused review of landmark (past) and very recent contributions on the nature, structure and hierarchy of instabilities of this type of convection. This chapter is devoted to the investigation of the thermo-kinetics features of overcooled austenite transformation in three grades of 0.75-0.77 wt.% C complex-alloyed (Mo-Si, Mn-Si-Cr-Mo) steel intended for rail applications. Magnetometric and thermal analyses were used to build Time-Temperature-Transformation and Continuous-Cooling-Transformation diagrams presenting the kinetics of austenite transformation in studied steels.

**Translucent Silica Aerogel: Properties, Preparation and Applications**

*Cinzia Buratti (Department of Engineering, University of Perugia, Perugia, Italy)*

In series: *Materials Science and Technologies*


Silica translucent aerogels are unique materials able to improve the thermal insulation performance of buildings without compromising daylight transmission. The aim of the book is to give a general overview on state of the art research on translucent aerogels and their applications in buildings and to provide a data set about thermal and physical properties, useful in buildings’ energy performance simulation and design. Silica aerogels are nanostructured solid materials made of approximately 96% air and 4% silica. They show a thermal conductivity in the 0.012–0.020 W/mK range and excellent optical properties, especially visible transmission. They come in granular and monolithic form. Granular aerogels are relatively easy to produce and less expensive than monolithic panes, but show worse optical
and thermal performance. Monolithic aerogels enable vision through the material, but their fabrication process is not developed at an industrial scale. The book collects the contributions of experts in the field of translucent aerogels from all over the world. The contents of the eight chapters are detailed as follows: Chapter 1 is the contribution from Union College, Schenectady (USA). The chapter reviews the chemical approaches to silica wet gels preparation, the drying methods used to yield monoliths, and the challenges and limitations associated with its production. Chapter 2 is a contribution from EMPA, Dübendorf (Switzerland). It is a review of current state of the art research on silica aerogel granulate production, including raw materials selection, hydrophobization strategies, and drying methodologies. Chapter 3 is a contribution from Takenaka Corporation, Tokyo (Japan). The main techniques for the optical properties evaluation are described and data are provided. An original application of translucent aerogels in buildings and future research topics are also proposed. Chapter 4 is a contribution from Recep Tayyip Erdogan University, Rize and Ataturk University, Erzurum (Turkey). A review of the thermal properties of aerogels is provided, highlighting their better performance when compared to conventional and superinsulation materials. Chapter 5 is a contribution from the University of Perugia, Perugia (Italy). The acoustic properties of both granular and monolithic systems are investigated. For example, the influence of granule size and layer thickness that is deepened for granular aerogels is discussed, while for the monolithic form, the little data that is currently available is reported on. Chapter 6 is a contribution from the University of Tuscia, Viterbo (Italy) and Buro Happold Ltd, London (UK). It is focused on Life Cycle Assessment of silica aerogel, showing the research challenges in understanding its environmental impact, lower than the one of conventional thermal insulating glazing systems. Chapter 7 is a contribution from the University of Lyon and INSA-Lyon, Lyon (France). An overview of measurement methods and modeling tools available in literature is provided and a summary of the main mechanical properties of both monolithic and granular aerogels is reported on. Chapter 8 is a contribution from the Norwegian University of Science and Technology, Trondheim and SINTEF, Trondheim (Norway). Authors present their experimental investigations on various aerogel systems in different building envelopes (new aerogel glass material, aerogel-incorporated concrete, and so forth).

**ZnO Thin Films: Properties, Performance and Applications**
*Paolo Mele (Shibaura Institute of Technology, Koto-ku, Tokyo, Japan)*

In series: *Materials Science and Technologies*


Hardcover: 978-1-53616-086-4. $230.00.


Zinc oxide (ZnO) is an n-type semiconductor with versatile applications such as optical devices in ultraviolet region, piezoelectric transducers, transparent electrode for solar cells and gas sensors. This book “ZnO Thin Films: Properties, Performance and Applications” gives a deep insight in the intriguing science of zinc oxide thin films. It is devoted to cover the most recent advances and reviews the state of the art of ZnO thin films applications involving energy harvesting, microelectronics, magnetic devices, photocatalysis, photovoltaics, optics, thermoelectricity, piezoelectricity, electrochemistry, temperature sensing. It serves as a fundamental information source on the techniques and methodologies involved in zinc oxide thin films growth, characterization, post-deposition plasma treatments and device processing. This book will be invaluable to the experts to consolidate their knowledge and provide insight and inspiration to beginners wishing to learn about zinc oxide thin films.

**Materials Science**

**Ceramics and Glasses**

**An Introduction to Glass Transition**
*Robert Ramirez*

In series: *Polymer Science and Technology*


Sofcover: 978-1-53615-706-2. $95.00.

e-book: 978-1-53615-715-4. $95.00.

An Introduction to Glass Transition opens with a comparison of entropy function of temperature dependence with configurational entropy, which was published by various authors and found almost the same temperature dependence with overlap. From the dependence of the logarithm of configurational entropy vs. the logarithm of temperature, the authors suggest that it is possible to successfully predict the relations between the values of m for different glass formers. Following this, microscopic local dynamics were analyzed by way of atomistic molecular dynamics simulations through the conformational transition behavior across a wide range of temperatures. The glass transition temperature may be predicted through the intersection of separate temperature dependences. Such local dynamics were found to become gradually heterogeneous when the temperature went down close to the glassy state. The closing chapter provides a brief summary of the studies relevant to glass transitions in well-defined lipids systems such as anhydrous and/or water mixed systems. Then, some current problems and future problems are described.
Applied Aspects of Nano-Physics and Nano-Engineering
Kirill Levine (Department of General and Technical Physics, The Saint Petersburg State Mining University, St. Petersburg, Russia) and Andrey G. Syrkov (Department of General and Technical Physics, The Saint Petersburg State Mining University, St. Petersburg, Russia)

In series: Nanotechnology Science and Technology

This volume of a book “Applied Aspects of Nanophysics and Nano-engineering” is partially composed of short communications – proceedings of international symposium “Nanophysics and nano-engineering 2017” (venue: Mining university), and full-sized chapters, covering selected topics in depth. A variety of phenomena are described in this book. Smart nanostructured coatings, methods of synthesis based on both “top to bottom” (plasma deposition, remote methods) and “bottom to top” approaches are covered, as well as modeling approaches and analytical techniques. As before, ecological issues are highly addressed, such as materials for water purification and pollution prevention. Permanent interest in fullerences as to one-dimensional carbon-based structures arises from their ability to be relatively easily modified by species of interest, for the purpose of bio-substrate delivery. Graphite exfoliation is utilized as a method to produce graphite nanoparticles and the modelling of fullers is reported. Issues of dielectric relaxation of solids have been a stunning topic for at least a few decades, and even now the interest in the dielectric relaxation approach seems to increase. This is because of the sensitivity of this non-destructive method to the conformational changes of flexible molecular moieties, brushes, and interchain segments. This avenue was focused on materials appliances of the method and technical development of the method and resolution, as well as the materials studied. Semiconductor technologies discussed in the book were related to developing solar concentrator systems (silicon technologies), heterojunction solar cells of eutectic gallium arsenide solid solutions for the development of alternative energy technologies), heterojunction solar cells of eutectic gallium arsenide solid solutions for the development of alternative thermoelectric materials. Findings in sorption properties of clay minerals with singlet oxygen is underestimated as global in terms of environmental factors. Oil shale and oil shale ash Baltic basin studies are reported. Materials with magnetic properties synthesized by the sol-gel method are based on varriium-titanium ceramic and are studied via a variety of powerful experimental methods: SEM, XRD, SAXC, and SAPNS. Findings in the surface modification of zinc oxide films are modified by selenium. A special experimental setup is made possible using an ambient pressure approach without isolating the atmosphere to synthesize the hierarchically ordered surface structure. Interface properties related to water absorption on an aluminum surface are analyzed, and they are of interest for tribology applications of organopolymer compositions. Composite nanostructured materials for solar concentrator systems are discussed, as well as compounds for thermionic energy converters. It is believed that this book provides an unbiased sketch of progress in nanotechnology and related areas.

Introduction of Forensic Nanotechnology as Future Armour
Ritesh Kumar Shukla (Assistant Professor, Division of Biological & Life Sciences, School of Arts & Sciences, Ahmedabad University, Navrangpura, Ahmedabad, Gujarat, India) and Alok Pandya (Assistant Professor, Department of Chemistry, Center of Engineering and Enterprise University and Institute of Advanced Research, Koba Institutional Area, Gandhinagar Gujarat, India)

In series: Nanotechnology Science and Technology
Hardcover: 978-1-53616-040-6. $195.00.

Forensic Science is an interdisciplinary subject that uses principles and methodologies of various subjects including chemistry, biology, physics, geology, psychology, social science and engineering to help law enforcement agencies to enforce criminal laws and regulations to resolve civil and criminal cases. Body fluids, fingerprints, footprints, illicit drugs, explosives etc. are the evidences that can be found at the scene of crime in trace amount. These evidences are first analysed through screening and then confirmatory methods. During this process, the probability of sample loss is very high, especially when a sample amount is inadequate and therefore does not meet minimum requirement to analyse it. Generally, scientists discuss new–fangled nanotechnology research and its conversation turns to the commercial aspects or potential issues around health, safety, and the environment. In recent years, some of them have shown their interest to integrate nanotechnology with basic sciences and applied for forensic purposes, which are shifting the paradigm of forensic...
investigation process. Introduction of Forensic Nanotechnology as Future Armour is the first comprehensive book to consider both fundamental and applied aspects of forensic nanotechnology. This emerging field of forensic science investigates real-time crime scenes and terrorist activities, inquiries, detects the presence of explosive materials, biological indicators, document preservation, fingerprint enhancement and food adulteration using nanomaterial. Scientists and researchers are working on nanotechnology applications that may steer the power of forensic investigation, but the challenges to bring them from lab to the courtroom remain persistent. Moreover, some crucial concerns in forensic science such as analysis cost and time, methods’ effectiveness and wide availability and results’ accuracy and reliability are creating obstacles in forensic investigation and security. In this book we requested to enrich the scientific content as state-of-the-art in terms of application of nanotechnology in forensic science. In this way, all chapters will emphasise the emerging field of research to solve crime with the help of nanotechnology in various fields of forensic science like detecting explosives, biological indicators, document preservation, latent fingerprint and food adulteration. The integration of laboratory processes onto a nano platform is conceivably the most interesting advancement of nanotechnology highlighted in this book and some more issues like recent research developments, challenges and future opportunities are also addressed in this book. The book is written for a wide readership including researchers, undergraduate and graduate students from diverse backgrounds such as chemistry, materials science and nanotechnology engineering, physics, life sciences, forensic science, and biomedical engineering. It can be used not only as a textbook but also as a review and reference book. However, because many other nano technological applications for forensic analysis are yet to be studied, this book can be helpful to explore new opportunities. We hope that the chapters of this book will provide the reader with valuable insight as a revolutionary, protective tool in the fields of virology, crime scene investigation, identification, forensic biology and toxicology. We also hope that after reading this book, researchers around the world will be motivated to enter into the field of forensic nanotechnology.

**Materials Technology**

*Advances in Materials Science Research. Volume 39*

**Maryann C. Wythers**

In series: *Advances in Materials Science Research*

2019. 228 pp.

Hardcover: 978-1-53616-176-2. $250.00.


In Advances in Materials Science Research. Volume 39, the origin and fundamentals of the electrodeposition technique are introduced, and the characteristics of the nucleation process are described. Additionally, a procedure to analyze the nucleation process in electrodeposition is explained. The authors go on to address the role electropolymerization plays in electrochemical systems in the context of interplay between kinetics and energetics. Next, spherulitic textures of poly(tetrafluoroethylene-co-(perfluoroalkyl vinyl ether)] (PFA) are examined in detail using polarized optical microscopy. The PFA consists of random comonomer units among the tetrafluoroethylene units which crystallize as spherulites composed of lamellae, although polytetrafluoroethylene usually forms extended-chain crystals because of the rigid nature of 13/6 helices. This compilation also describes the development and characterization of electrically conductive polyaniline coated fabrics for electromagnetic interference shielding applications. The aforementioned fabrics have been prepared using conductive polyaniline polymer as well as the in situ polymerization technique. The effect of gluconates as a corrosion inhibitor for mild steel in acidic medium is investigated, as well as the adsorption characteristic of gluconates. Lastly, attempts are made to study the correlation between the corrosion of two classes of mild steels, as well as their corrosion inhibition, versus the chemical compositions of two classes of mild steels suitable for galvanizing.

**Clothing and Textiles**

*Cloth Fabrics: Preparation, Synthesis and Applications*

**Fabien Salaün (Assistant Professor, Roubaix Cedex, France)**

In series: *Polymer Science and Technology*


Hardcover: 978-1-53615-006-3. $95.00.

e-book: 978-1-53615-007-0. $95.00.

Written by a group of international experts, this book provides a comprehensive analysis of the main scientific and technological advances that ensure the continued functionality of cellulosic textile supports. It begins with a discussion on the chemical and physical structure of cotton and its different properties and provides a review of the main vancées regarding textile surface modification. The second chapter is devoted to the use of cotton supports in comfort, and more specifically the importance of the textile structure for the management of heat and mass transfers. These different concepts are discussed from the description of recent models applied in this field of expertise. The third chapter is dedicated to the fire retardant properties of textile substrates, with a more specific focus on textile finishing treatments to improve this type of surface functionality. Finally, the
last chapter is oriented towards the chemical grafting of microcapsules from the DOPA, which currently constitutes a possible new application path in the textile field. This book covers a wide range of textile finishing treatments for cotton, allowing the reader to learn about new technologies in this field.

**Steel**

**Carbon Steel: Microstructure, Mechanical Properties and Applications**  
*Clyde Phelps*  
In series: *Materials Science and Technologies*  
Hardcover: 978-1-53615-435-1. $160.00.  
This compilation opens with a section discussing the key interactions required to successfully friction stir weld carbon steels. Friction stir welding is a relatively recent development, predominantly technologically established using aluminum, where the lower melting point of the material greatly aided the process. Next, corrosion models of carbon steel in aqueous solution are reviewed under atmospheric and oxygen depleted environments by focusing on the cathodic reaction and the corrosion film formed on carbon steel as a function of pH and anions. In conclusion, the temperature relation of interlamellar spacing of pearlite with supercooling in carbon steels, based on a previously theoretically foundation, has been determined by the pearlite and bainite phase volumes in alloy steels from the degree of supercooling.

**Friction Stir Welding (FSW): Advances in Research and Applications**  
*Mario Benson*  
In series: *Mechanical Engineering Theory and Applications*  
Softcover: 978-1-53615-384-2. $82.00.  
The opening chapter provides a comprehensive insight into dissimilar materials joined by FSW technology. FSW parameters such as tool design, tool pin offset, rotational speed, welding speed, tool tilt angle and position of workpiece material in the fixture for dissimilar materials are summarized. In the next chapter the author confirms the emission of particles in the nanorange during FSW of the most commonly used aluminium alloys, AA 5083 and AA 6082, which are originated from the aluminium alloy itself, due to friction of the welding tool against the workpiece. In the closing chapter, feasibility to join 2.5 mm thick AA5052 aluminium alloy and 1.4 mm thick high strength steel, DP590, by conventional FSW process (FSW) and TIG-assisted HFSW process (HFSW) is studied through couple experimental and numerical analysis. A comparative study in joining of dissimilar materials by conventional FSW and HFSW processes is performed to realize the effect of different welding parameters on the growth of IMC layer thickness.

**Military Science**

**Weapons Systems**

**Conventional Weapons Systems: Background and Issues for Congress**  
*Stewart Keller*  
In series: *Congressional Policies, Practices and Procedures*  
This book is a compilation of CRS reports on conventional weapons systems. The first report focuses on the background and issues for Congress on cluster munitions, which are air-dropped or ground-launched weapons that release a number of smaller submunitions intended to kill energy personnel or destroy vehicles. The next report focuses on the background and issues for Congress on Navy Aegis Ballistic Missile (BMD) Defense Program. The subsequent report discusses the background and issues for Congress on the Coast Guard’s programs for procuring National Security Cutters (NCS), 25 Offshore Patrol Cutters (OPCs) and 58 Fast Response Cutters (FRCs). Finally, the process and procedures that currently apply to congressional consideration of foreign arms sales proposed by the President is reviewed. This includes consideration of proposals to sell major defense equipment, defense articles and services, or the retransfer to third-party states of such military items.
Weapons of Mass Destruction: Chemical, Biological and Nuclear
Tamer Renders
In series: Nuclear Materials and Disaster Research
Hardcover: 978-1-53616-064-2. $230.00.
This book is a compilation of government reports on weapons of mass destruction. The first chapter is a bill that seeks to ensure the Department of Homeland Security (DHS) has the structure, authority, and tools it needs to counter the threat of weapons of mass destruction. Chapter 2 discusses the continuation of the national emergency with respect to the proliferation of weapons of mass destruction. Chapter 3 reports on the Department of Homeland Security’s organization to counter weapons of mass destruction. The danger North Korea poses to the world is more than just its rogue nuclear program and ballistic missile brinksmanship as discussed in chapter 4. Chapter 5 examines (1) DHS programs and activities to prevent and protect against domestic chemical attacks and (2) the extent to which DHS has integrated and coordinated all of its chemical defense programs and activities. Chapter 6 examines (1) information the federal government has about the procurement, distribution, use, and disposition of Agent Orange; (2) DOD and VA efforts to make information about where Agent Orange and its components were tested and stored available; and (3) challenges associated with Agent Orange testing.

Weapons Systems: Annual Assessment and Cybersecurity
Dale R. Copley
In series: Cybercrime and Cybersecurity Research
DOD acquires new weapons for its warfighters through a management process known as the Defense Acquisition System. Chapter 1 contains GAO’s 16th annual assessment of the Department of Defense’s (DOD) $1.66 trillion portfolio of 86 major weapon systems acquisition programs. It examines changes in the portfolio since 2016, including DOD’s progress implementing acquisition reforms. The Department of Defense (DOD) faces mounting challenges in protecting its weapon systems from increasingly sophisticated cyber threats. Chapter 2 addresses (1) factors that contribute to the current state of DOD weapon systems’ cybersecurity, (2) vulnerabilities in weapons that are under development, and (3) steps DOD is taking to develop more cyber resilient weapon systems.

Nanotechnology and MEMS
Advances in Nano Instrumentation Systems and Computational Techniques
K. Kamalanand, Ph.D. (Assistant Professor, Department of Instrumentation Engineering, MIT Campus, Anna University, Chennai, India), D. Najumnissa Jamal, Ph.D. (Professor, Electronics And Instrumentation Engineering, B.S. Abdur Rahman Crescent Institute of Science and Technology, Chennai, India), and P. Mannar Jawahar, Ph.D. (Senior Professor and 8th Vice Chancellor, Anna University, Chennai, India; Present Vice Chancellor, Karunya Institute of Technology, Coimbatore, India)
In series: Nanotechnology Science and Technology
Softcover: 978-1-53615-019-3. $95.00.
Nanotechnology is the novel technology that enables the control of matter at dimensions of roughly 1 to 100 nanometers, where exclusive phenomena allow novel systems and applications to arise. In other words, nanotechnology is the art and science of manipulating atoms, molecules and matter at nanometric length scales, to create new systems, materials, and devices. The field of nanotechnology delivers opportunities and challenges for scientists and technologists for the development of new materials and systems with greater functionality and speed. The rapidly emerging innovations in nano systems have enabled the creation of new sensors, transducers and measurement devices with great improvements in sensitivity, specificity and accuracy, along with significant size reductions. Nanotechnology and nano engineering stand to produce significant scientific and technological advances in diverse fields including medicine and physiology, automation, space research, and sensor technology. Also, recent advances in computational nanoscience enables scientists and technologists to study nano materials and nano systems more efficiently with the help of mathematical models and simulation techniques. This edited book aims to provide useful scientific discussions on the recent advances in nano
systems and computational techniques covering topics in the diverse fields of biomedical engineering, automobile engineering, mechatronics, materials technology and renewable energy.

Advances in Nanotechnology. Volume 22
Zacharie Bartul and Jérôme Trenor
In series: Advances in Nanotechnology
Hardcover: 978-1-53615-558-7. $250.00.
e-book: 978-1-53615-559-4. $250.00.

The first chapter of Advances in Nanotechnology. Volume 22 discusses the three major types of nanocomposites: metal, polymer, and ceramic matrix. Characteristics of different types of nanocomposites and their potential applications are presented briefly as well. Following this, the authors examine the increasing use of engineered nanomaterials in consumer and industrial products that has aroused global concern regarding their fate in biological systems, resulting in a demand for parallel risk assessment. This compilation also contains numerous approaches for targeted drug delivery systems using various options, particularly those involving the incorporation of nanocomposite materials. The basics on the Hubbard model in 1D and 2D and its applications in work on nanomaterials is presented. These applications concern electrical transport properties and optical properties of nanomaterials. The authors provide a review of recent research on the effect of various polymers incorporation in thin films on optical, structural, electrochemical and other properties of thin films. An overview of biocompatible and biodegradable polymer based bone scaffold materials is provided, along with their synthesis, characterization, applications, advantages and short comings in the field of biomedical engineering application. Besides the effect of porosity, pore size, interconnectivity, microstructure of the scaffold on bone tissue engineering are evaluated in this section. Later, the generalized structural-parametric model, the solution of the matrix equations of the multilayer electroelastic actuator for the mechatronics and the nanotechnology and the calculation their transfer functions are presented by the authors. The concluding chapter assesses some common multiscale methods developed while stating some of the computational merits in multiscale simulations compared to large-scale atomistic simulations.

Cellulose to Nanocelluloses: Production, Properties and Applications
TriDung (TD) Ngo, Ph.D. (Research Scientist, Biomass Conversion and Processing Technologies, InnoTech Alberta, Edmonton, Alberta, Canada)
In series: Nanotechnology Science and Technology
Hardcover: 978-1-53615-057-5. $195.00.

Cellulose is the most important and naturally abundant organic biopolymer in the biosphere. It is the basic structural component of plant cell walls. Cellulose based materials have been utilized by our society as engineering materials for thousands of years and their use continues today as verified by the enormity of the worldwide industries. In recent decades, the conversion of renewable lignocellulosic biomass and natural biopolymers into chemicals, liquid fuels and feed supplements has gained considerable attention. In addition, the gradual depletion of petroleum resources, the lack of space for landfills, concerns over emissions during incineration, and environmental pollution caused due to accumulation of these non- destructible solid wastes has spurred efforts to develop high performance materials which are eco-friendly and sustainable. Keeping in mind the advantages of the bio-based materials from cellulose, this volume, edited by Tri-Dung (T-D.) Ngo, includes cellulose from the micro- (cellulose fiber) to nanoscale (nanocellulose). This book focuses on the chemistry, production, properties and applications of the cellulose materials in various areas. From the view of sustainable development, the new materials associated with cellulose bio-renewable sources are enormously being addressed. In addition, nanotechnology is a rapidly evolving area of development, as science, engineering and technology have merged to bring nanoscale materials much closer to reality. The book also summarizes the recent developments made in the area of advanced bio-nanomaterials, chemical functionalization of celluloses from the micro- to nanoscale, and their processing and successful utilization for selected applications. A number of critical issues and suggestions for future work are discussed, underscoring the roles of researchers for the efficient development of advanced bio-nanomaterials through value addition to enhance their use.
Gold Nanoparticles: Advances in Research and Applications
Joshua R. Chin
In series: Nanotechnology Science and Technology
2020.
Hardcover: 978-1-53616-578-4. $230.00.
Gold Nanoparticles: Advances in Research and Applications opens by presenting the properties of gold nanoparticles and the necessity of a thermodynamic investigation. The physics of heat generation and heat transfer by diffusion, convection and radiation are examined, and the effect of thermoplasmonics on the random lasing of nanoparticles is described. Nanoparticles are being incorporated into a variety of devices to improve their performance. Recent advances in applications of the plasmonic effects of nanoparticles, significantly focused on the incorporation of gold nanoparticles to improve solar cell efficiencies, are discussed. The authors go on to investigate the formation of elongated gold nanoparticles, which occurred by laser ablation of gold target in aqueous solutions containing divalent ions. Additionally, the influence of a permanent external magnetic field on generated earlier colloidal solutions of Au nanoparticles is investigated. The penultimate chapter describes the events that lead to gold’s well-deserved reputation as a good catalyst for several reactions, and considers some of the applications and catalytic uses of gold, mostly in the form of nanoparticles. The concluding study explores gold nanoparticles’ applications for the treatment of various forms of cancer, such as adenocarcinoma, melanoma, breast cancer, gastric, laryngeal, lung, oral cancer and prostate cancer. Gold nanoparticles are used in cancer treatment primarily as drug carriers, photosensitizers and radiosensitizers.

Nanostructured Materials: Synthesis, Properties and Applications
Junhui He (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China)
In series: Nanotechnology Science and Technology
Nanoscience and technology are interdisciplinary fields that bring together physicists, chemists, materials scientists, biochemists, and engineers to meet both current and future challenges, including searching for nanostructured materials for various advanced applications, clean and renewable energies for sustainable development, new technologies for environmental protection and new strategies for detecting and fighting diseases. Among the current subjects in nanoscience and technology, nanostructured materials have been attracting a huge amount of attention and have seen fast and explosive development in the past two decades. Such materials have already shown great potentials in smart materials, composite materials, information technologies, solar cells, fuel cells, secondary batteries, supercapacitors, environmental pollutants monitoring devices, air and water purification, and removal of both domestic and outdoor air pollutants. This book invited internationally renowned experts in the field of nanostructured materials from different countries, and assembled fourteen reviews and articles that discuss the synthesis, properties and applications of nanostructured materials. It also points out future research & development directions of nanostructured materials and encourages future efforts towards a better life and environment through research and development of nanostructured materials, especially via the younger generation. This book is suited for the audience of teachers, lecturers, professors, researchers, engineers, college students, graduate students, policy makers, and company managers.

Surface-Enhanced Raman Spectroscopy: Methods, Analysis and Research
Vinay Bhardwaj, Ph.D. (Department of Biomedical Engineering, Rutgers, The State University of New Jersey, Piscataway, NJ, USA) and Anthony J. McGoron, Ph.D. (Professor, Department of Biomedical Engineering, Associate Dean for Academic Affairs, College of Engineering and Computing, Florida International University, Miami, FL, US)
In series: Nanotechnology Science and Technology
In the last decade, we have seen spurring growth in academic and industrial interest in Raman spectroscopy and its modifications, in particular, Surface-Enhanced Raman Spectroscopy (SERS). This is evident by the number of SERS publications in the last decade, from 580 in 2005 to almost
2000 in 2014. There are now companies worldwide that are dedicated to manufacturing SERS substrate, sensors, and other SERS-based products. The miniaturization of Raman instrumentation from bulky and expensive bench-top designs to inexpensive handheld spectrometers has allowed SERS to be employed as an in situ detection technique. Some examples of the industrial success of Raman and SERS are rapid raw material identification (RMID), Process Analytical Technology (PAT) and drug screening in pharma and biotech industries, continuous surveillance of food, water, and environmental safety, and the diagnosis and continuous monitoring of diseases like cancer, diabetes, etc. This progress in translating Raman and SERS techniques into commercial use and commercial products is possible because of the close collaboration between scientists and engineers. However, the weak signals of Raman spectroscopy is an inherent limitation of the spontaneous Raman spectroscopy technique. Therefore, several modifications have been made, including but not limited to, surface-enhanced Raman spectroscopy (SERS), spatially offset Raman spectroscopy (SORS), transmission Raman spectroscopy (TRS), coherent anti-Stoke’s Raman spectroscopy (CARS), and tip-enhanced Raman spectroscopy (TERS). Spontaneous Raman spectroscopy has become a one-of-a-kind, portable, and affordable technology for in-situ detection and continuous monitoring in resource-limited-settings. The primary focus of this textbook is to try to cover the fundamentals in SERS methods of preparing substrates and sensors, and efficient spectral analysis approaches like chemometrics for diverse applications, listed in the paragraph above. However, with a goal to give a true picture to the audience when assessing the scope of spontaneous Raman and Surface-enhanced Raman for specific applications, we have briefly introduced industrially successful examples of other types of Raman spectroscopy techniques, such as SORS, TRS, and CARS.

**Special Topics**

**Advances in Engineering Research. Volume 28**

**Victoria M. Petrova**

In series: *Advances in Engineering Research*


Hardcover: 978-1-53615-011-7. $250.00.


In Advances in Engineering Research. Volume 28, the authors describe the functional beam splitter that divides the incident beam into several derivative ones, simultaneously introducing the prescribed transformation of their transverse profiles. Recommendations for managing the diffracted beams’ profiles and their employment in precise metrology and optical vortices analysis are given. Unlike most engineered filtering systems, many naturally evolved biological filters have variable rather than fixed porosity. These include internal and external filters for feeding, as well as filters to capture waste particles. As such, this collection examines a prime example of a biological system with fluctuating porosity: the baleen filter of mysticete whales, which uses keratinous plates and hair-like fringes to capture prey of varying size. Next, the adaptive identification problem of dynamic systems with uncertainty is considered on adaptive observer class. A method is proposed for construction adaptive observers time-varying linear dynamic objects at non-fulfillment of condition excitation constancy. The authors also explore wireless sensor networks with common applications existing the real world. The benefits and challenges of the networks are discussed in an effort to overcome some constraints of energy limitation. A review of traditional data collection methods is provided with details. In closing, the algorithm for full rejection of the side lobes of a pattern antenna array at given azimuth angle points outside the main lobe area is considered. The structural diagram of the array is presented, and the efficiency of the suggested design has been investigated.

**Advances in Engineering Research. Volume 29**

**Victoria M. Petrova**

In series: *Advances in Engineering Research*


Hardcover: 978-1-53615-902-8. $250.00.


The first chapter of Advances in Engineering Research. Volume 29 describes the next generation device Stacked Nanosheet, which has the potential to replace the three-dimensional transistor architecture, FinFET. The authors also present the recent progress in complementary metal-oxide-semiconductor technology. Recent biomimetic research examined in the next chapter may enable for a better understanding of biofiltration as well as potential technological applications via experimentation with novel materials, including 3D printed filters simulating natural systems. The possibility of using methane as an alternative and promising reducing agent in various metallurgical and chemical processes is discussed. Additionally, the electrochemical performances of transition-metal-disulfide-based electrodes fabricated from different configurations, including binary and ternary composites, is discussed. Following this, this compilation discusses the assumptions of the physics of transport in nano-scale wire Si pn-junction diodes with the aid of device simulations. An advanced theoretical model to predict current-voltage characteristics of nano-scale wire Si pn-junction diodes is proposed. The authors introduce several voltage contrast studies that have been done so far, introducing an experiment on active voltage contrast imaging of the cross-sectional surface of multilayer ceramic capacitors using helium ion microscopy. Next, the authors present a new two-stage method for the qualitative and quantitative detection method of hydrophobing injection media used as a subsequent masonry seal against rising damp. The aim of the final
chapter is to review four classes of integer asymmetric codes and to illustrate their potential for use in modern short-range optical networks.

**Advances in Engineering Research. Volume 30**

*Victoria M. Petrova*

In series: *Advances in Engineering Research*  
Hardcover: 978-1-53616-092-5, $250.00.  

Advances in Engineering Research. Volume 30 opens with a presentation on automated defect recognition (ADR) software developed for the in-service inspection of a flexible riser based on x-ray simulated inspections, developed by combining image processing and deep learning neural networks. Following this, methods are presented in which rays are used to calculate the properties of a propagating, generally astigmatic Gaussian beam at any point in an optical system, in order to obtain the desired Gaussian beam focus and minimize aberrations. The authors also present an enhanced input/output-linearizing and decoupling control in variable speed for a wind energy conversion system, which is based on an adaptive nonlinear fuzzy inference system, a combination of artificial neural networks and fuzzy logic. The deterioration of such structures is a frequent phenomenon due to environmental factors. The authors go on to address the need for online insert inspection during computer numerical control lathe cutting processes through the development of a system based on eye-in-hand machine vision that incorporates a manipulator. This system can perform online inspections for detection and classification of fractures, built-up edges, chipping, and flank wear in the inserts of external turning tools. Next, type-2 fuzzy logic control is proposed in order to control the altitude and attitude of an unmanned quadrotor. Simulation results suggest that the proposed control provides improved dynamic responses and perfect decoupled control in steady and transient states. In closing, an analytical approach called the 2D spatial filtering technique was used to simulate the surface single fibre action potential generated by an impulsive source is the outcome of the spatial phenomena.

**Advances in Engineering Research. Volume 31**

*Victoria M. Petrova*

In series: *Advances in Engineering Research*  
Hardcover: 978-1-53616-343-8, $250.00.  

Advances in Engineering Research. Volume 31 begins with an introduction to the main components of an introductory study of a problem and its related data collection and analysis requirements. This part is fundamental to help initiate the process of design research management, and focuses on the first phase of the pre-design study, in which the bases of design problem identification, interpretation, planning and solution exploration are established. Next, this compilation proposes the use of the Cat Swarm Optimization technique to indicate the ideal number of threads in local pools. This method was implemented and tested with a real-world integration process. The areas of Enterprise Application Integration and Discrete-event Simulation are explored, and the authors propose a new approach for identifying potential performance bottlenecks in the software design phase. Following this, the authors introduce a discrete-time motion camouflage control to make a robot approach a maneuvering pursuee while not rotating the Line-Of-Sight joining the pair. In practice, there is time delay between the time instant when the pursuee’s position is measured and the time instant when the control is applied. Additionally, performances of the conventional linear and proposed nonlinear robust adaptive Kalman filters based integrated inertial, baro and GPS altimeters are tested via predetermined simulations. During simulations, in order to test these approaches, two kinds of measurement malfunction scenarios have been taken into consideration; continuous bias and measurement noise increment. Q-switched and mode-locked fiber lasers were demonstrated using tungsten disulfide 2D nanomaterials as a saturable absorber. The saturable absorber was fabricated by repeatedly dropping and drying WS2 solution onto a microfiber to form a nanosheet layer. Then the WS2 coated microfiber was placed in a ring laser cavity to generate Q-switched fiber laser operating at 1568 nm using a 2.4 m long Erbium-doped fiber as the gain medium. The authors go on to describe the present choice for inductive power transmission and to explain a new transmitter topology that can intrinsically minimize the problems associated with the present choice. A comparison between the present and proposed topologies is provided. In the penultimate investigation, kinetic studies of CaO+CO2 and CaO+SO2 reactions are performed by thermogravimetry. The kinetic parameters of these non-catalytic gas-solid reactions are determined using the sophisticated random-pore model. In the closing study, a preliminary evaluation and analysis of the structural condition of the Church of Saint Andrew is examined. For this purpose, an in situ detailed drawing survey and the mechanical characteristics of the structure and the underground area are determined.
Current STEM. Volume 2
Maurice H. T. Ling (Colossus Technologies LLP, Singapore School of BioSciences, The University of Melbourne, Australia)
In series: Current STEM
Edited by: Maurice H. T. Ling (Colossus Technologies LLP, Singapore School of BioSciences, The University of Melbourne, Australia)
Softcover: 978-1-53616-042-0. $95.00.
e-book: 978-1-53616-043-7. $95.00.
Science, technology, engineering, and mathematics; collectively acronym as STEM; are rapidly advancing fields in their own rights. As a book series, Current STEM aims to be a friendly forum for both academic researchers and industrial practitioners to present their work as book chapters. Hence, the chapters should be varied, and this is intended. Current STEM is encompassing in terms of the type of work to encourage a generation of researcher-practitioners. In this volume, there are three personal narratives of personal experiences from overseas students.

Government Reports on Information Security and Technology for March 2019
Mathias Schweitzer
In series: Privacy and Identity Protection
Softcover: 978-1-53615-848-9. $82.00.
e-book: 978-1-53615-849-6. $82.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of March, grouped according to the topics: Information Security and Technology.

Gyroscopes: Types, Functions and Applications
Marcel Gerste
In series: Mechanical Engineering Theory and Applications
Softcover: 978-1-53615-856-4. $82.00.
e-book: 978-1-53615-857-1. $82.00.
In the first chapter of Gyroscopes: Types, Functions and Applications, the operating principle, types and applications of fiber-optic gyroscopes are summarized, and a novel slow light gyroscope based on coupled resonators is introduced. Following this, two signal processing techniques are discussed, each for a different type of gyroscope noise. These two techniques are then combined to produce a general technique for improving the accuracy of a gyroscope. The main methods of creating compact passive optical gyroscopes and their development trends are examined in the closing chapter.

Mechanical Analyses of Nanoscale Beams
Farzad Ebrahimi, Ph.D. (Mech. Eng. Dept., Imam Khomeini International University, Qazvin, Iran)
In series: Mechanical Engineering Theory and Applications
Hardcover: 978-1-53615-089-6. $310.00.
A material structure assembled from a layer or cluster of atoms with the size of the order of nanometers is called a nanostucture. There are many events such as the discovery of scanning electron microscopy that gave fillip to nanotechnology research. However, with the discovery of a new allotrope of carbon in the late 1980s and early 1990s, namely the fullerene, carbon nanotubes, and graphene, a new chapter in nanotechnology research has emerged. These have become the basic building blocks for many nanodevices such as nano sensors, nano actuators, nano gyroscopes, etc. All of these devices are packaged under Nano Electro Mechanical Systems (NEMS) or Nano Opto Mechanical Systems (NOMS) devices. The key elements in these devices are the nanobeams, nanorods, nanoplates and nanoshells, respectively. This book is a comprehensive text to cover the mechanical
analyses of nanobeams. The book introduces the reader to the fundamentals, as well as more in-depth aspects, of vibration and buckling analyses of nanoscale beams faced with different environments and the associated latest research applications. Most of the solutions presented in these chapters are the results of investigations conducted by the author and his collaborators since 2015. The results presented herein may be treated as a benchmark for checking the validity and accuracy of other numerical solutions. Despite a number of existing texts on the theory and analysis of nanoscale beams, there is not a single book that is devoted entirely to the mechanical investigation of nanobeams. It is hoped that this book will fill the gap to some extent and be used as a valuable reference source for postgraduate students, engineers, scientists, and applied mathematicians in this field.

**Methods of Research and Optimization of the Mineral Raw Material Grinding Process**  
Marinka K. Baghdasaryan (Vice-Rector of the National Polytechnic University of Armenia, Professor, Doctor of Department of Electrical Machines and Apparatuses, Yerevan, Armenia)

In series: **Electrical Engineering Developments**

2019.  
Sofcover: 978-1-53615-948-6. $95.00.  

In the monograph, a number of problems of scientific and technical importance are introduced and discussed, which are of great interest and can find widespread applications, as well as graduate and postgraduate students engaged in investigation, optimization and management of electromechanical systems. The theoretical and practical results presented in the work have applied significance for investigating, optimizing, revealing the regularities of the operation modes, establishing the technological factors and power dependencies, controlling the operating state of the elastic transmission links of the electromechanical system, and, based on them, developing a control system for the diagnosis tool of the system’s operating state and increasing the power consumption efficiency. The methods introduced in the monograph differ from those developed by other well-known authors in that the author has succeeded in revealing the relationship of technological and energetic parameters. Taking into consideration the variety of the technological load, mechanisms and schemes, the author has proposed and implemented new complex approaches to making optimal decisions on the problem, considering them in the solution of diverse problems aimed at increasing the efficiency of the ore-grinding technological process. In Chapter 1 of the monograph, the principles of increasing the control efficiency of the ore-grinding technological process by assessing the power-saving possibilities for the consumed energy have been considered. In Chapter 2, the operation modes of the ore mill have been investigated, for which models for investigating the change in the moment of the active load and the mill–motor electromechanical system have been developed. A system of criteria for studying the changes in the grinding degree, time, and the number of mills used has been obtained, and the condition for the stability of the gravity center of the mill active load, as well as the frequency areas of interest for assessing the state of the system have been revealed. Chapter 3 is devoted to the development of the imitation model for investigating the dynamic processes of the electrical drive systems ensuring the ore mill operation, which reveals the regularities of changes in the electromagnetic torque and dynamic load at different characteristics of changes in the resistive torque created by the mill, and at different values of hardness of the drive unit. In Chapter 4, the possibilities of identifying and preventing abnormal operating modes of synchronous electrical drive of the ore-grinding mill are considered. In Chapter 5, the optimization problem is formulated through the analysis of the grinding control strategy and energy-saving requirements. The necessity of forming a loss matrix to determine the optimization criteria and controlled parameters is substantiated. In Chapter 6, the automated diagnosis and control systems are proposed that provide wide control possibilities, and, in the last chapter, method of rationing the specific consumption of electricity by the technological process of grinding is presented.

**NASA: Major Projects and Select Issues**  
Oliver Cummings

In series: **Space Science, Exploration and Policies**

Hardcover: 978-1-53614-817-6. $230.00.  

NASA’s mission is to drive advances in science, technology, aeronautics, and space exploration to enhance knowledge, education, innovation, economic vitality, and stewardship of Earth. Chapter 1 and 2 provide a snapshot for 2018 of how well NASA is planning and executing its major acquisition projects. In May 2017, GAO found that projects were continuing a generally positive trend of limiting cost and schedule growth, maturing technologies, and stabilizing designs. But, at the same time, GAO noted that many of these projects, including some of the most expensive ones, were approaching the phase in their life cycles when cost and schedule growth is most likely. Chapter 3 is an overview of the 2017 budget. Chapter 4 determines the extent to which NASA has established and implemented leading IT management practices in strategic planning, workforce planning, governance, and cybersecurity. Chapter 5 addresses, among other things, the extent to which (1) NASA’s Inspector General investigated contractor and grantee whistleblower reprisal complaints; (2) NASA’s Administrator reviewed reprisal complaints in a timely manner; and (3) NASA communicated the applicable whistleblower reprisal protections to contractors. Chapter 6 sets forth policy governing the release of public information, which is defined as information in any form provided to news and information media, especially information that has the potential to generate significant media, or public interest or inquiry.
Sky Radiance and Luminance Models: The Boundary Conditions  
Sokol Dervishi (Dean, Faculty of Architecture and Engineering, Epoka University, Albania; Priv. Dozent, Institute of Architectural Sciences, Vienna University of Technology, Austria)

In series: Energy Science, Engineering and Technology
Softcover: 978-1-53614-957-9. $82.00.
e-book: 978-1-53615-008-7. $82.00.

This research aims to make an original and advanced contribution to state-of-the-art sky models. It focuses on high-resolution sky radiance and luminance models given their essential importance in a host of scientific and engineering applications. For example, improved sky radiance and luminance models can be used to improve the design and operation of energy-efficient and sustainable buildings. All these applications require high-fidelity information on spatial and temporal distribution of solar irradiance and illuminance on building surfaces. The empirical basis for related decision-making processes is, however, rather limited: Available measured data – collected by typical weather stations – is typically restricted to global horizontal irradiance. Few research-class climatic monitoring stations also record the diffuse component of solar irradiance. This research will therefore examine a number of such models in detail and explore both improvement possibilities of existing models and the potential for alternative modeling approaches in future developments. Specifically, this research aims at developing accurate high-resolution sky radiance and sky luminance models for the city of Vienna. In order to generate sky radiance maps, the diffuse radiation component of the global horizontal irradiance should be typically derived based on proper diffuse fraction models. Accordingly, this research starts with an attempt to improve the existing diffuse fraction models. When both diffuse and direct horizontal irradiance data are available, the existing models intended for the sky radiance generation can be comprehensively evaluated and further developed to arrive at a more reliable locally verified sky radiance distribution model. In addition to sky radiance distribution maps, which greatly support the design of buildings’ solar energy systems, sky luminance maps are needed to support the design of buildings’ daylighting systems. However, to generate sky luminance maps from sky radiance maps, appropriate luminous efficacy information is required, which is not available from typical weather stations. Therefore, this research shall also explore methods with various degrees of resolution to derive illuminance data based on more broadly available global irradiance data. Solid high-resolution empirical data is needed not only to evaluate the existing models, but also to develop and validate new models. For this purpose, I will deploy our existing monitoring facility to systematically collect both typical weather station data and additional information concerning the diffuse component of the global horizontal irradiance, global horizontal illuminance, vertical irradiance, as well as detailed sky luminance and radiance distributions.

Wind Tunnels: Uses and Developments  
Zied Driss, Ph.D. (University of Sfax, Sfax, Tunisia)

In series: Mechanical Engineering Theory and Applications

Wind tunnels are facilities in which the wind is produced by fans or by compressed air to study and measure the action of the air flow around a solid. There are two basic types of wind tunnels: the closed-circuit and the open-circuit. Open-circuits draw air from the ambient environment and exhaust it back to the ambient after exiting the fan, while in closed-circuit, the air repeatedly circulates through the tunnel. The closed-circuit design delivers improved efficiency and generates less noise, but it is more expensive and more difficult to manufacture. Wind tunnels are typically used in aerodynamic research to analyze the behavior of flows under varying conditions, both within channels and over solid surfaces. The present book focus on uses and developments of wind tunnels. It consists on nine chapters presenting different studies on the design, uses and developments of the wind tunnel in different applications like wind turbines, building and aircraft models. The presented case studies and development approaches aim to provide the readers, such as engineers and PhD students, with basic and applied studies broadly related to the wind tunnels and its applications.
Advances in Aerospace Science and Technology. Part II
Parvathy Rajendran (Lecturer/Head of System and Design Research Cluster, School of Aerospace Engineering, Universiti Sains Malaysia, Engineering Campus, Pulau Pinang, Malaysia) and Mohd Zulkifly Abdullah (School of Mechanical Engineering, Universiti Sains Malaysia, Engineering Campus, Pulau Pinang, Malaysia)
In series: Mechanical Engineering Theory and Applications
Aerospace science and technology have made remarkable progress in the last century. Although a few publications have written on this topic, most are inadequate in elucidating the various advanced technologies developed in recent years. For this reason, publishing a book in which prominent researchers elaborate and discuss their research efforts in conjunction with other efforts appears sensible. In this book, the most accurate and current materials were gathered, reviewed, and presented by an exceptional group of experts. This book presents state-of-the-art and current developments and applications in aerospace. This is a Part II continuation book of previously published edited book composed of the following: · Chapter 1: Application of High-Performance Interconnection in Aerospace Technology · Chapter 2: Knitted Structures in Aerospace Applications · Chapter 3: Carbon Nanotube-Reinforced Hierarchical Carbon Fibre Composites · Chapter 4: Influence of Aviation Fuel on Composite Materials · Chapter 5: Deterioration in Aero-Engines · Chapter 6: Important Aerodynamic Parameters in Flapping-Wing Unmanned Aerial Vehicles · Chapter 7: Visual Localisation and Mapping using Unmanned Aerial Vehicles · Chapter 8: Geospatial Mapping Using Satellites This book is intended for undergraduate and graduate students as well as professionals in the field of aeronautical/aerospace engineering. The book could also serve as a guide for engineers and practitioners, academicians, government agencies, and industries.

Aviation
Air Transportation: Programs, Safety and Essential Air Service
Louis Perreault
In series: Transportation Issues, Policies and R&D
Federal Aviation Administration (FAA) programs are funded under four broad budget accounts: operations and maintenance (such as air traffic control and aviation safety functions); facilities and equipment (such as control towers and navigation beacons); grants for airports under the Airport Improvement Program (AIP); and civil aviation research conducted or sponsored by FAA. Additionally, certain aviation programs are administered by the Department of Transportation (DOT) Office of the Secretary, including the Essential Air Service (EAS) program, which subsidizes airline service to certain small or isolated communities as discussed in chapter 1. Chapter 2 reviews airline IT outages and examines DOT’s and FAA’s roles related to airline IT outages and what is known about these outages and their effects on passengers Since 1992, Passenger Facility Charges (PFC) have been collected from airline passengers, as part of the airline ticket purchase, to help commercial service airports pay for capital development projects such as construction or improvement of runways, terminals, and roadways, among other things as reported in chapter 3. Chapter 4 examines, among other issues, trends in DOT’s data on airline service; the effectiveness of DOT’s compliance efforts; and the extent to which DOT’s passenger education efforts align with key practices for consumer outreach. Chapter 5 describes how DOT’s review of antitrust immunity applications considers the potential effects on consumers and evaluates how DOT monitors approved grants of antitrust immunity. Chapter 6 examines the extent to which DOT’s process for awarding fiscal year 2014–2016 grants was consistent with its grant notices and recommended practices for awarding discretionary grants, and examines the extent to which fiscal year 2010–2014 grants assisted airports in improving their air service, and identifies factors that affect the success of grant projects. The Airline Deregulation Act of 1978 gave airlines almost total freedom to determine which domestic markets to serve and what airfares to charge. This raised the concern that communities with relatively low passenger levels would lose service as carriers shifted their operations to serve larger and often more profitable markets. To address this concern, Congress established the Essential Air Service (EAS) program to
ensure that small communities that were served by certificated air carriers before deregulation would continue to receive scheduled passenger service, with subsidies if necessary as discussed in chapter 7. Chapter 8 describes the reasons why TSA established the TSO Basic Training program; discusses factors OTD considers when updating TSO Basic Training curriculum; and assesses the extent to which TSA evaluates its TSO Basic Training program.

Aviation Security: Countermeasures, Access Control, Air Cargo and Charter Operations

Peter Chapman

In series: Transportation Issues, Policies and R&D


The Transportation Security Administration (TSA) has spent billions of dollars on aviation security programs. However, recent attacks involving aircraft and airports in other countries underscore the continued threat to aviation and the need for an effective aviation security program. Chapter 1 examines the extent to which TSA has (1) information on the effectiveness of selected passenger aviation security countermeasures and (2) systematically analyzed the cost and effectiveness tradeoffs among countermeasures. Incidents of aviation workers using access privileges to smuggle weapons and drugs into security-restricted areas and onto planes has heightened awareness about security at commercial airports.

TSA, along with airport operators, has responsibility for securing the nation’s approximately 440 commercial airports. Chapter 2 reports on (1) the extent to which TSA has assessed the components of risk and (2) the extent to which TSA has taken actions to oversee and facilitate security, among other objectives. U.S. policies and strategies for protecting air cargo have focused on two main perceived threats: the in-flight detonation of explosives concealed in an air cargo shipment and the hijacking of a large all-cargo aircraft for use as a weapon to attack a ground target such as a major population center, critical infrastructure, or a critical national security asset. Additionally, there is concern that chemical, biological, or radiological agents or devices that could be used in a mass-casualty attack in the United States might be smuggled as international air cargo as discussed in chapter 3. On August 31, 2016, as part of a shift in U.S. policy toward Cuba, air carriers resumed scheduled commercial flights between the United States and Cuba, a route previously only open to public and private charter carrier operations. Chapter 4 examines (1) the extent to which TSA followed its standard operating procedures when assessing aviation security at Cuban airports in fiscal years 2012 through 2017; (2) the results of TSA’s Cuban airport assessments in fiscal years 2012 through 2017; and (3) the results of TSA’s air carrier inspections for Cuba in fiscal years 2016—when commercial scheduled air service between the United States and Cuba resumed—and 2017.

Industrial Health and Safety

Railroad Operations

Issues in Transportation: Background, Policy and Funding

Naja T. Johansen

In series: Transportation Issues, Policies and R&D


Federal assistance to public transportation is provided primarily through the public transportation program administered by the Department of Transportation’s Federal Transit Administration (FTA). The federal public transportation program was authorized from FY2016 through FY2020 as part of the Fixing America’s Surface Transportation (FAST) Act. Chapter 1 provides an introduction to the program as authorized by the FAST Act. Unless legislative action is taken, formula funding for the federal transit program could be decreased by approximately $1 billion in FY2020, roughly 12% from the amount authorized in the FAST Act as reported in chapter 2. Almost every conversation about surface transportation finance begins with a two-part question: What are the “needs” of the national transportation system, and how does the nation pay for them? Chapter 3 is aimed at discussing the “how to pay for them” question. The 116th Congress is expected to address surface transportation reauthorization, including consideration of how to deal with the persistent gap between projected HTF revenues and program costs as discussed in chapter 4 and 5. Chapter 6 begins by discussing FHWA assistance for the repair and reconstruction of highways and bridges damaged by disasters (such as the 2017 Hurricanes Harvey, Irma, and Maria) or catastrophic failures (such as the collapse of the Skagit River Bridge in Washington State in 2013). This is followed by a discussion of FTA’s assistance program, established in 2012, which has provided assistance to public transportation systems on two occasions, once after Hurricane Sandy in 2012 and again after the 2017 hurricanes. The focus of chapter 7 is on how best to implement and finance a system of deterrence, protection, and response that effectively reduces the possibility and consequences of terrorist attacks without unduly interfering with travel, commerce, and civil liberties. The focus of chapter 8 is on truck freight and that portion of the rail and port industries that transports truck trailers and containers (intermodal freight). The Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides long-term, low-interest loans and other types of credit assistance for the construction of surface transportation projects as reported in chapter 9. DOT opened the Build America Bureau in July 2016. Chapter 10 assesses, progress DOT made to establish the Bureau and carry out its responsibilities, the Bureau’s process for evaluating applications, and
whether the Bureau provided a clear rationale for decisions in that process. Chapter 11 examines the implications for federal transit policy of the current weakness and possible future changes in transit ridership. Chapter 12 discusses the extent to which information exists about future transit workforce needs and FTA assists with addressing current and future transit workforce needs.

**Rail Transportation: Positive Train Control, Safety and Rehabilitation**  
*Julius L. Rasmussen*  
In series: *Transportation Issues, Policies and R&D*  

The Rail Safety Improvement Act of 2008 (RSA08) requires implementation of positive train control (PTC) on railroads which carry passengers or have high-volume freight traffic with toxic- or poisonous-by-inhalation hazardous materials. Chapters 1 and 2 discuss passenger railroads’ PTC progress and FRA’s steps to assist them, and how passenger railroads and FRA plan to approach the 2018 and 2020 deadlines. Chapter 3 reports on the FRA’s passenger equipment safety standards using a performance-based approach to adopt new and modified requirements governing the construction of conventional and high-speed passenger rail equipment. Chapter 4 examines key characteristics of FRA’s and FTA’s rail safety oversight programs and strengths and limitations of FRA’s and FTA’s rail safety oversight programs. Crashes at highway-rail grade crossings are one of the leading causes of railroad-related deaths. Chapter 5 examines the focus of FRA’s grade-crossing-safety research, how states select and implement grade-crossing projects and what data are available from FRA to inform their decisions, and the challenges states reported in implementing and assessing projects and the extent to which FHWA assesses the program’s effectiveness. When a train is not moving but its engines are running, it can present risks and disruptions for the surrounding community as reported in chapter 6. Railroad bridges carry heavy and potentially dangerous loads over busy roadways and important waterways. Many of these bridges are a century old or more. However, unlike road bridges, which are the responsibility of public entities, railroad bridges are the responsibility of the private railroad companies that own or operate them. Congress has acted in recent years to improve oversight of railroad bridge safety, but incidents have prompted concerns about whether enough is being done to protect the public as discussed in chapter 7. Train derailments or collisions are often well-publicized events and receive significant attention from policymakers seeking to reduce their reoccurrence. Less attention has been devoted to trespassing, although it is a much greater cause of rail-related fatalities than derailments and collisions combined. As reported in chapter 8, over three-fifths of deaths in rail incidents have been pedestrian trespassers, and vehicle-train accidents at railroad grade crossings account for nearly one-third Congress created the Railroad Rehabilitation and Improvement Financing (RRIF) program to offer long-term, low-cost loans to railroad operators, with particular attention to small freight railroads, to help them finance improvements to infrastructure and investments in equipment. This program is the focus of chapter 9. Chapter 10 examines how WMATA spent its capital funds from fiscal years 2011 through 2017, how WMATA’s new capital planning process addresses weaknesses it identified in the prior process, and WMATA’s progress toward its track preventive maintenance program’s goals and how the program aligns with leading program management practices.

**Special Topics**

**Transportation Issues: Appropriations, Partnerships and Infrastructure**  
*Caleb Franklin*  
In series: *Transportation Issues, Policies and R&D*  

This collection of articles deals with the benefits of different types of stem cells sources, use, manipulation, and aspects for the treatment of chronic diseases. Topics include the role of calcium channel pathway’s in the regulation of neural stem cell differentiation; the evolutionary roles of the totipotent, pluripotent, or even multipotent stem cells; the derivations of multipotent MSCs; and potential canine-derived stem cell therapies for dogs. The scope of the book also provokes further studies into other topics, such as MSC differentiation into hepatocytes and the involvement of these cells with microRNA-133 in type 1 diabetes; the role of Vitronectin in the differentiation into endoderm; the extent to which the stemness of dental pulp stem cells might be useful; PBMCs as a source for pluripotent stem cells; yoga in possible synergy with the finding that bone marrow stromal cells provide relief from a laboratory reagent used as drug-mediated pain in spinal cord injury.
Transportation Security Administration (TSA): Training, Wait Times and Assessments

Virgil Roberson
In series: Transportation Issues, Policies and R&D
Hardcover: 978-1-53615-130-5. $230.00.

After the terrorist attacks of September 11, 2001, Congress passed and the President signed the Aviation and Transportation Security Act into law, with the primary goal of strengthening the security of the nation’s civil aviation system. The act established TSA as the agency with responsibility for securing all modes of transportation, including civil aviation. As part of this responsibility, TSA performs or oversees security operations at the nation’s nearly 440 commercial airports, including managing passenger and checked baggage screening operations.

Transportation: Congressional Issues, Financing and Improvements

Frederick Daniels
In series: Transportation Issues, Policies and R&D
Hardcover: 978-1-53615-651-5. $195.00.
The nation’s air, land, and marine transportation systems are designed for accessibility and efficiency, two characteristics that make them vulnerable to attack. The focus of chapter 1 is how best to implement and finance a system of deterrence, protection, and response that effectively reduces the possibility and consequences of terrorist attacks without unduly interfering with travel, commerce, and civil liberties. Almost every conversation about surface transportation finance begins with a two-part question: What are the “needs” of the national transportation system, and how does the nation pay for them? Chapter 2 is aimed almost entirely at discussing the “how to pay for them” question. On December 4, 2015, President Barack Obama signed the Fixing America’s Surface Transportation Act (FAST Act; P.L. 114-94). As reported in chapter 3, the act authorized spending on federal highway and public transportation programs, surface transportation safety and research activities, and rail programs for five years, through September 30, 2020. Despite significant investments in public transportation at the federal, state, and local levels, transit ridership has fallen in many of the top 50 transit markets. If strong gains in the New York area are excluded, ridership nationally declined by 7% over the past decade. Chapter 4 examines the implications for federal transit policy of the current weakness and possible future changes in transit ridership.

U.S. Flag Maritime Industry: Sustainability, Security and New Technologies

Jonathan H. Henriksen
In series: Transportation Issues, Policies and R&D
Hardcover: 978-1-53615-480-1. $230.00.
Chapter 1 examines the state of the U.S. flag Maritime Industry including the U.S. Merchant Marine. It includes testimony from the U.S. Coast Guard (Coast Guard or Service), the Maritime Administration (MARAD), and representatives of the maritime industry. The U.S. government relies on U.S.-flag vessels that trade internationally to transport cargo and to provide a pool of U.S. mariners who could be called upon in times of crisis for DOD’s reserve fleet. Chapter 2 discusses: (1) the effect the U.S. government’s support for the U.S.-flag fleet has had on national defense needs and other government programs; (2) the challenges identified by stakeholders in sustaining the U.S.-flag fleet for defense needs; and (3) the status of the mandated national strategies related to the U.S.-flag fleet. The U.S. economy is dependent on the expeditious flow of millions of tons of cargo each day through the global supply chain—the flow of goods from manufacturers to retailers. Chapter 3 discusses the progress and challenges associated with CBP’s implementation of initiatives and programs responsible for enhancing the security of the global supply chain. Chapter 4 examines emerging maritime technologies. It will explore how such technologies could improve U.S. Coast Guard mission performance and enhance the safety and efficiency of maritime transportation.
SOCIAL SCIENCES
Accounting, Auditing, CSR, and the Taxation in a Changing Environment: A Study on Indonesia

Elvia R. Shauki, PhD, Yulianti Abbas, PhD, Beta Yulianita Gitaharie, PhD, and Dwini Handayani, PhD (Faculty of Economics and Business, Universitas Indonesia, Gedung Dekanat FEB UI Kampus Widjojo Nitisastro, Depok, West Java, Indonesia)

In series: Business, Technology and Finance
2020.
e-book: 978-1-53616-518-0. $230.00.

Dear Researchers/Students/Librarians, and Practitioners, We are pleased to offer you the following book titled: “Accounting, Auditing, CSR, and the Taxation in a Changing Environment: A Study on Indonesia” written by prominent authors who are specialized in the area from the Faculty of Economics and Business, Universitas Indonesia, and other top-ranked universities in Indonesia. The book covers some most recent studies and updated issues related to a Changing Environment. Indonesia Study covering the following three main areas: 1. The first part contains seven papers on financial accounting and taxation topics; 2. The second part consists of seven papers related to corporate governance and CSR topics; and 3. The third part consists of seven papers under auditing topics. This book is strongly recommended to be used as a reference for researchers, students, and also business practitioners not only in Indonesia, but also wider audiences that required deeper insights/thoughts in dynamic, changing and global emerging market (i.e. in Indonesia).

Advances in Business and Management. Volume 17

William D. Nelson

In series: Advances in Business and Management
Hardcover: 978-1-53616-376-6. $250.00.

Advances in Business and Management. Volume 17 first aims to analyze the three most significant dimensions of the current technological development of the economy and society: analytics, intelligence, and ethics. Next, this collection introduces the concept of digital disruption, and puts forward the application of new technologies as a valuable asset in the current business landscape. The authors go on to demonstrate that consumer electronic contracts are better protected than in-person contracts, as the European legislation has created certain mechanisms in order to promote electronic contracting, among which are: the duties of information, the right of withdrawal and online arbitration. One study identifies useful information through data mining in an effort to better understand consumer claims about products and services, mainly complaints about the companies that are evaluated. The penultimate chapter discusses in-memory business intelligence, as well as the modeling of business analysis questions. Lastly, the dynamic processes of the foreign equity price and the foreign exchange rate are depicted by identifying a Markov-modulated multi-currency market model capturing both individual jumps and systematic cojumps.

Accounting

The Rise of Accounting, Auditing, and Finance: Key Issues and Events That Shaped These Professions for over 200 Years since 1800

Lal Balkaran (Scarborough, Ontario, Canada)

In series: Business, Technology and Finance

With over 200 professional associations, 120 pieces of authoritative literature, 65 well-known fraud cases, 62 accounting firms (including the origins and growth of the “Big Four”), 55 regulatory statutes, 30 frameworks, and much more, this unique book shows in a chronological sequence a range of select issues and events that have impacted and
led to the growth of the professions of accounting, auditing, and finance since 1800. The origins and factors that gave rise to the different types of accounting and auditing are all here. Over 1,200 well-researched issues and events are classified in the twelve chapters found within this book.

**Banks and Banking**

**Community Banks and Credit Unions: Effect of Regulations and Compliance Burdens**  
*Richard L. Mizelle*

In series: *Banks and Banking Developments*  
Hardcover: 978-1-53616-066-6. $195.00.  

Community banks—generally small and locally focused institutions—are important sources of credit to small businesses. Since the 2007–2009 financial crisis, regulators have made significant changes to the regulatory environment. Chapter 1 examines the data regulators use to measure small business lending, as well as the extent of any regulatory effects on the amount of community banks’ small business lending and their lending processes, changes in bank populations, and financial performance. Chapter 2 examines (1) the regulations community banks and credit unions viewed as most burdensome and why, and (2) efforts by depository institution regulators to reduce any regulatory burden. GAO analyzed regulations and interviewed more than 60 community banks and credit unions (selected based on asset size and financial activities), regulators, and industry associations and consumer groups.

**Business Ethics**

**Trust, Trustworthiness, and Stewardship: A Transformative Approach**  
*Cam Caldwell, Ph.D. (University of Illinois Springfield, Illinois), and Verl Anderson, DBA (Dixie State University, Professor of Management, St. George, UT, US)*

In series: *Business Issues, Competition and Entrepreneurship*  
e-book: 978-1-53615-094-0. $195.00.

This new book identifies insights about the ethical issues associated with trust and trustworthiness, and their relationship to the leader’s obligations as an ethical steward. The purpose of this book is to identify the importance of trust and trustworthiness in the “Transformative Era,” a time when constant change and the increasing demands of customers make it paramount for organizations to obtain the commitment, followership, and extra-role behaviors required to compete in a volatile, uncertain, complex, and ambiguous global marketplace. Unfortunately, leaders today have failed to earn the trust of others by creating arms-length transactional relationships that destroy employee commitment. This book frames the characteristics of the “Transformative Era” and explains how leaders can restore the trust that they have lost by honoring the steward’s obligation to create long-term wealth and serve the interests of all stakeholders. In a world where 71% of all employees are actively looking for new job opportunities and only 16% of employees worldwide describe themselves as “actively engaged” in their work, the importance of reframing the employer-employee relationship demands immediate attention. This book identifies the conditions which make up today’s “Transformative Era” and explains how and why leaders destroy trust in the modern organization. It then identifies how leaders can adopt a Transformative Approach to creating organizations that are prepared to survive the turmoil of the modern economy.
Workplace Bullying in African Tertiary Institutions
Ilongo Fritz Ngale (National University of Lesotho, Roma, Maseru, Lesotho & Institute for Dispute Resolution in Africa, University of South Africa, UNISA)
In series: Business Issues, Competition and Entrepreneurship
In series: Bullying and Victimization
Hardcover: 978-1-53615-894-6. $160.00.
Violence is a fundamental and contemporary preoccupation of researchers, decision-makers and the general public, but particularly so within the context of restructuring of African tertiary education. Through all-inclusive multi-faceted themes; definition, sources, forms, impacts, coping, and management of workplace bullying. Workplace Bullying in African Tertiary Institutions highlights the fact that the latter is no longer a ‘myth of the western world’ as much as it is now a ‘present reality’ within the context of African tertiary institutions. Workplace Bullying in African Tertiary Institutions reveals the link between workplace bullying and on-going university restructuring programmes, in which the latter are portrayed as being executed through a pro-bullying neoliberalist ethos. The latter is deemed propitious for workplace bullying for the following reasons: ‘comply or perish’ rhetoric, intolerant of dissent and negative criticism of government, individualism and competitiveness, compromised collegiality and stifled debate, ever-intensifying workload, short-term contracts, job insecurity, funding pressures, power imbalances and weakened union power. Workplace Bullying in African Tertiary Institutions highlights issues of university restructuring, which are considered propitious for exacerbating workplace bullying, while proposing strategies, models, and policies, for understanding and mitigating the ravages of workplace bullying on staff wellness. Workplace Bullying in African Tertiary Institutions represents a major contribution to research and literature in industrial and organizational psychology, and will be vital for students, researchers, and professionals in human resource management, national and international decision-makers, and bodies that strive for the amelioration of personnel wellness especially within the African and world contexts of on-going and inevitable university reforms.

Business Law

Auditing: An Overview
Timothy Cavenagh and Jacob Rymill
In series: Business, Technology and Finance
Softcover: 978-1-53615-116-9. $95.00.
In this compilation, critical aspects of the internal audit function are contrasted in order to provide an insight into the value of internal auditing and, within that, to submit arguments for the implementation and maintenance of an internal audit function. The authors examine how to optimize the allocation of audit resources over an auditee population with respect to available population statistics. The included survey mainly deals with audit situations where the auditee is assumed to behave rationally and optimize its expected utility based on information regarding the audit strategy. According to the “International Standards for the Professional Practice of Internal Auditing”, internal auditors must always maintain an objective and independent working attitude to perform effectively. However, data indicate that this requirement might often become challenged due to bias-prone situations, eventually leading to false conclusions or even wrong decisions by auditors and management. As such, the authors address selected cognitive biases for internal auditors and potential behavior patterns tempering the effects of these biases. In common energy audit methods, the efficiency of waste-to-energy power plants is evaluated directly. This method is highly sensitive to the measurement errors of waste mass flow which is difficult determine precisely. Further-more, the direct method does not clarify the sources of energy loss. Using the indirect method which is proposed in this chapter book, the power plant is split into three sub-systems. The overall efficiency is determined by analyzing the multiplication of thesesub-systems’ efficiency and the internal energy usage. This final chapter uses case examples to showcase how auditing is a suitable method for clarifying the level of comprehensive, risk-based safety and security management of organizations operating in business and the public sector. The authors encourage organizations to develop their safety and security management system using a risk-based approach.
Arbitration is one form of alternative dispute resolution (ADR). It must be taken into account that ADR was envisioned as an alternative to litigation, with its own manifest of substantive and procedural characteristics. To that extent, arbitration enhances access to justice by permitting claimants to bring claims they could not afford to bring to court. International commercial arbitration is a legally binding dispute resolution process that substitutes for domestic courts. Arbitration began as an extrajudicial mechanism for resolving disputes. Arbitration “took its rise in the very infancy of Society” as a private and self-contained method, distinctive from litigation and not as a postscript to the development of public courts. Has this fact been shared by state legislation and modern arbitration practice or has arbitration been developed into an appendage of the courts? Merchants established arbitration tribunals because they felt that the courts were not sufficiently knowledgeable about commercial customs and were exceptionally slow and unwieldy. National arbitration, international commercial arbitration, and investor-state arbitration have developed on parallel but separate tracks, each reacting to different political, economic, and social settings. Although arbitration is a quasi-judicial proceeding, it is not conducted with the same degree of formality as a judicial proceeding within the United States which means that the spirit of arbitration is the parties’ freedom from the strict structure of ordinary judicial proceedings. Arbitration has to guarantee legal certainty, predictability, and settlement being costless. The emergence of many non-independent arbitral tribunals creates a Gordian knot by merely adding more work for courts in order to deal with so many requests for intervention in arbitrations. The current perplexing between arbitration and courts causes only confusion, profit chances for many people and less quick and cheap justice. In addition, arbitration is judicialized dependent more and more from court rulings; this causes it to lose its advantages and become more and more costly. Because of this, its validity is questionable and it might be more productive to establish more courts to employ more judges rather than struggling with arbitration as it currently functions. Taking into account that private parties are performing an escalating number of tasks that were once accomplished by the government, privatization has become so prevalent and involves “delegation” of state authority to private parties. This can be seen as a legal basis for the independence of arbitration under National Authority Management Arbitration (NAMA).
Economics

Challenges of the Global Economy: Some Indonesian Issues
Teguh Dartanto, Beta Yulianti Gitaharie, Dwini Handayani and Elvia R. Shauki, PhD
(Faculty of Economics and Business, Universitas Indonesia, Gedung Dekanat FEB UI Kampus
Widjojo Nitisastro, Depok West Java, Indonesia)
In series: Economic Issues, Problems and Perspectives
2020.
Dear Researchers/Students/Librarians, and Practitioners, We are pleased to offer you the following book chapter titled:
“Contemporary issue on development economics and well-being: Exploring distinctive cases in Indonesia” written by
prominent authors who are specialized in the area from the Faculty of Economics and Business, Universitas Indonesia, and
other top-ranked universities in Indonesia. The book covers some most recent studies and updated issues in the following
areas: 1. Population Economics in Indonesia: The articles in this chapter discuss issues on the changing population
structure, including: the impact of Millennials’ behavior and characteristics that are different from the previous generation
on various life spectrum, such as fertility preference; the impact of fast development in transportation and economy on
migration; and decent wages in a global production network. 2. Islamic Economics and Microfinance: This chapters
contains articles that analyze how zakat, shodaqoh, and infaq can be used as economic empowerment tools by improving
the well-being in the community; and the intention of zakat payers through the lense of Theory of Planned Behavior. 3.
Monetary and Fiscal Challenges in a Changing Global Economy: Some issues discussed by the articles in this chapter are
the use of monetary and fiscal policy to speed up economic growth; some empirical findings on taxation, trade
liberalization and its impact on food security; technology and its impact on money demand; and analysis of the stock
market’s trend. These timely issues are relevant in increasing the interdependence and openness of the country. This book
is strongly recommended to be used as a reference for researchers, students, and also business practitioners not only in
Indonesia, but also wider audiences that require deeper insights/thoughts in dynamic, changing and global emerging market
(i.e. in Indonesia).

Contributions on Applied Business Research and Simulation Studies
Orlando Manuel da Costa Gomes (Lisbon Accounting and Business School, Instituto Superior
de Contabilidade e Administração de Lisboa, Lisboa, Portugal) and Mariya Gubareva (Lisbon
Accounting and Business School and Lisbon School of Economics and Management)
In series: Business Issues, Competition and Entrepreneurship
2020.
Hardcover: 978-1-53616-450-3. $195.00.
e-book: 978-1-53616-451-0. $195.00.
This book is a commemorative edition of the 260th anniversary of the Lisbon Accounting and Business School (ISCAL),
one of the oldest business schools in Europe. The book collects a series of contributions from teachers and researchers of
ISCAL, offering a state-of-the-art picture of the research conducted in this higher education institution. This is an
institution oriented to applied teaching and applied science, and the various contributions in this collective work intend to
highlight such reality, Contributions range from accounting and finance to law, business and management. A substantial
part of the book is dedicated to economic and business simulations; this is an area of special interest and focus to ISCAL,
since practical teaching through simulation games and simulation exercises is a vital part of the institution’s mission. The
work is constituted by nine chapters organized into four parts: Part I – On Applied Business Research: Thoughts on
Accounting, Finance, Business, and Law; Part II – Simulation Studies: Evaluation of Classroom Experiences; Part III –
Simulation Studies: Projecting Pedagogy into Perspective; and Part IV – Simulation Models and Theory. Overall, the book reaches most of the areas of applied business research, offering valuable contributions to be used by researchers and teachers.

Developments and Prospects of Business Economics and Finance in Muslim Countries
Eleftherios Thalassinos (University of Piraeus, School of Maritime and Industrial Studies, Applied Business and Economics (ICABE),
Piraeus, Greece)
In series: Business, Technology and Finance
Hardcover: 978-1-53615-015-5. $195.00.
This collective volume published by Nova Science Publishers, Inc. (NOVA) includes studies on “Developments and Prospects of Business Economics and Finance in Muslim
to the law, misquoting of the legal codes by civil servants in their correspondence, backdating of official letters and
should know that, even in the course of simple transactions, he or
exemptions from taxation can be arbitrarily denied by fiscal authorities under invented pretexts. A stockholder and investor
index, also created from World Bank data. Also in r
development based on World Bank data. They consider the impact of governance on economic growth through a new
between development pat
devolved governance structure. Data from social sectors is highlighted to illustrate trends. Later, to assess the relationshi
existing data. In terms of political approaches to economic planning, Kenya has moved from the centralized statist
behind socioeconomic inequality in Kenya are examined based on a reinterpretation of previously published works and
comparison with other World Trade Organization members using the Data Envelopment Analysis method. The d
inquiry. The authors go on to evaluate economic competitiveness in China, and its position as a global player in
based on a policy analysis of World Trade Organization e
examines key policy requirements involved in developing countries’ participation in future global e-commerce. This is
based on a policy analysis of World Trade Organization e-commerce policies using grounded theory tools of deep-level
inquiry. The authors go on to evaluate economic competitiveness in China, and its position as a global player in
comparison with other World Trade Organization members using the Data Envelopment Analysis method. The dynamics
behind socioeconomic inequality in Kenya are examined based on a reinterpretation of previously published works and
existing data. In terms of political approaches to economic planning, Kenya has moved from the centralized statist
approach in 1963 to a “district focus” strategy in the 1980s; an era of devolved funding from the 1990s and, since 2010, a
devolved governance structure. Data from social sectors is highlighted to illustrate trends. Later, to assess the relationship
between development paths and institutions in the Republics of the former Soviet Union, the authors build an index of
development based on World Bank data. They consider the impact of governance on economic growth through a new
index, also created from World Bank data. Also in relation to the former Soviet Union, the authors demonstrate that
exemptions from taxation can be arbitrarily denied by fiscal authorities under invented pretexts. A stockholder and investor
should know that, even in the course of simple transactions, he or she can encounter decisions of authorities contradictory
to the law, misquoting of the legal codes by civil servants in their correspondence, backdating of official letters and

Macroeconomic Policies in Countries of the Global South
Anis Chowdhury (Western Sydney University & University of New South Wales, Australia) and Vladimir Popov (Director of Research, Dialogue of Civilizations Research Institute, Berlin, Germany)
In series: Economic Issues, Problems and Perspectives
The volume examines macroeconomic policies for developing countries. The chapters analyse the kind of macroeconomic policies that are more conducive to inclusive and sustainable growth in developing countries. They also investigate whether particular fiscal, monetary, and exchange-rate policies have similar effects in developed and developing countries or whether these effects are country specific. The volume demonstrates that while there are no one-size-fits-all policy prescriptions, some general principles can be drawn from the experiences of successful countries. The volume is a useful addition to the scant literature dealing with macroeconomic policies for inclusive and sustainable development, and policymakers will find it useful in designing policies for achieving sustainable development goals (SDGs). The volume will also be useful for higher degree research students, especially in the area of inclusive and sustainable development.

Progress in Economics Research. Volume 42
Albert Tavidze
In series: Progress in Economics Research
Hardcover: 978-1-53615-120-6. $250.00.
In relation to the perspectives of World Trade Organization members, Progress in Economics Research. Volume 42 examines key policy requirements involved in developing countries’ participation in future global e-commerce. This is based on a policy analysis of World Trade Organization e-commerce policies using grounded theory tools of deep-level inquiry. The authors go on to evaluate economic competitiveness in China, and its position as a global player in comparison with other World Trade Organization members using the Data Envelopment Analysis method. The dynamics behind socioeconomic inequality in Kenya are examined based on a reinterpretation of previously published works and existing data. In terms of political approaches to economic planning, Kenya has moved from the centralized statist approach in 1963 to a “district focus” strategy in the 1980s; an era of devolved funding from the 1990s and, since 2010, a devolved governance structure. Data from social sectors is highlighted to illustrate trends. Later, to assess the relationship between development paths and institutions in the Republics of the former Soviet Union, the authors build an index of development based on World Bank data. They consider the impact of governance on economic growth through a new index, also created from World Bank data. Also in relation to the former Soviet Union, the authors demonstrate that exemptions from taxation can be arbitrarily denied by fiscal authorities under invented pretexts. A stockholder and investor should know that, even in the course of simple transactions, he or she can encounter decisions of authorities contradictory to the law, misquoting of the legal codes by civil servants in their correspondence, backdating of official letters and
embezzlement of registered letters. The closing chapter studies the Spanish fishing and processing sector of anchovy, analyzing its trade balance and prices for preparation to characterize the current situation of this sector at the national level. Production and economic performance are analyzed in the local, European and global context to define trends affecting the management of this species.

Progress in Economics Research. Volume 43

Albert Tavdze

In series: Progress in Economics Research


Progress in Economics Research. Volume 43 first presents results of the multi-factor model development for predicting external economic activity of industrial companies as a tool for substantiating effective alternatives for their development. Following this, the authors investigate the behavior of Federal Reserve chairmen as viewed in terms of the Taylor rule. In particular, we estimate a Taylor rule via an unobserved component model where: inflation and output gaps are obtained via bivariate state space model, the natural interest rate is time-varying and modeled as a random-walk, and inflation and output gap coefficients are modeled as smoothing spline process. The formation of a Mexican megalopolis is explored in an effort to understand the role of its metropolis. In this sense, the analysis focuses on the potential compatibility and interactions between metropolises. In the wake of historical and political events, stakeholder pressure can trigger shareholders to divest from politically incorrect markets with the goal of accomplishing socio-political change. As a comparative study, one paper reviews political divestiture to provide a theoretical framework for divestiture in the age of global warming. Next, this compilation utilizes a small-scale econometric model to study the dynamics of the Irish debt-to-gross domestic product ratio. The role of world gross domestic product growth, domestic gross domestic product growth, real effective exchange rate, interest rate and primary balance is analyzed in the debt dynamics. The authors offer an elementary microeconomic underpinning for the macroeconomic observation that while the number of workers entering the labour force is increasing, output and wages remain stagnant, and the way forward is technological change. Lastly, via refined equilibrium conditions and assumptions about regular conditional probability measures, a precise random differential equation generating $x_t$ for any $t \geq 0$ is presented.

Public Services and Related Concepts in the European Union: Understanding the European Union’s Legal Framework for Services of General Economic Interest

Aleš Ferčič, J.S.D (University of Maribor, Faculty of Law, Maribor, Slovenia)

In series: Laws and Legislation

2020.

Hardcover: 978-1-53616-422-0. $195.00.


Public services or more precisely, to use the EU’s terminology, services of general economic interest have traditionally played a vital role in the normal functioning of the society in the Member States. Yet, their equity or non-economic components have often caused tensions with the internal market components, such as the free movement of production factors, competition and economic efficiency. To put it simply, their place within the internal market has been for a long time a persistent irritant in the European public debate. However, the situation has changed over time, in particular after the Lisbon Treaty which introduced the “new context” which seems to be more friendly to services of general economic interest than ever before. In this regard it is worth noting that, given the place occupied by services of general economic interest in the shared values of the EU as well as their role in promoting social and territorial cohesion, the EU and the Member States, each within their respective powers and within the scope of application of the Treaties, must take care that such services operate on the basis of principles and conditions, particularly economic and financial conditions, which enable them to fulfil their missions. It is a kind of joint responsibility for the effective provision of services of general economic interest which indicates that also the EU institutions must accept them as a building block of the European (market) integration process. In fact, the recent case law seems to support this thesis. The Post-Lisbon state of play in the discussed field is in the center of the book but for practical reasons it also offers a broader view to a reader. The book consists of the three interrelated chapters which relate in one way or another to services of general economic interest and corresponding supranational legal framework. The latter is par excellence topic of the EU (law). The introductory chapter is designed as the EU law toolkit which explains the values and aims of the EU, its competences and institutional structure, the fundamental legal principles and concepts which are of particular importance for services of general economic interest. This is followed by the second chapter, which sets the scene by explaining the socio-political background at the both levels, national and supranational. In addition, the second chapter discusses the concept of services of general economic interest and related concepts. The third chapter is the very core of the book because it discusses the present EU’s legal framework for services of general economic interest. In addition to the general and sector-specific hard law, it includes most relevant case law and soft law. The main emphasis is, however, on the primary (constitutional) EU law, predominantly on the part relating market competition, e.g. Art. 101–109 TFEU, and on the part which directly address services of general economic interest, e.g. Art. 14 and the related Protocol, Art. 106(2) TFEU, and Art. 36 CFREU. As
such, the book could be interesting for all those who, in one way or another, deal with public services or services of general economic interest. Namely, the book is primarily oriented towards experts dealing with those services within the EU, however, due to its structure as well as gradualist and systematical approach, it can reach other readers as well and enable them to understand the EU’s legal framework for services of general economic interest.

Qualitative and Quantitative Economics (Q2E): Making Economics into a Science

Woodrow W. Clark II, PhD (Research Professor in Economics, Pepperdine University, Malibu, CA, US and Qualitative Economist, Founder and Managing Director, Clark Strategic Partners, Beverly Hills, CA, US) and Michael Fast, PhD (Aalborg University, Business School, Aalborg, Denmark)

In series: Economic Issues, Problems and Perspectives

Clark and Fast invented and created Qualitative Economics because people need to know what they are doing through interactions in their daily life. Economics is not just about statistics, data and numbers, but more about the meaning of this information. We provide everything from the definition of Qualitative Economics (QE) to the use of it in our daily lives, which includes everything we do daily from families, relatives and friends to work, vacations and hobbies.

Retirement Security: IRAs, Savings and Financial Risks

Sofia E. Paulsen

In series: Retirement Issues, Plans and Lifestyles
2020.

In response to concerns over the adequacy of retirement savings, Congress has created incentives to encourage individuals to save more for retirement through a variety of retirement plans. Some retirement plans are employer-sponsored, such as 401(k) plans, and others are established by individual employees, such as Individual Retirement Accounts (IRAs). Chapter 1 describes the primary features of two common retirement savings accounts that are available to individuals. Chapter 2 examines Department of Labor’s process for granting exemptions for prohibited IRA transactions and outcomes of that process, and the extent to which DOL and IRS collaborate on oversight of prohibited transaction rules for IRAs. In response to an aging workforce, countries around the world have developed policies to encourage older workers to work longer to improve the financial sustainability of national pension systems and address shortages of skilled workers. Phased retirement is one option that can be used to encourage older workers to stay in the workforce. Chapter 3 examines the extent to which phased retirement exists in other countries with aging populations, the key aspects of phased retirement programs in selected countries, and the experiences of other countries in providing phased retirement and how their experiences can inform policies in the United States. Federal law encourages individuals to save for retirement through tax incentives for 401(k) plans and IRAs—the predominant forms of retirement savings in the United States. Federal law also allows individuals to withdraw assets from these accounts under certain circumstances. Chapter 4 examines the incidence and amount of early withdrawals; factors that might lead individuals to access retirement savings early; and policies and strategies that might reduce the incidence and amounts of early withdrawals. Chapter 5 reports on the number of households approaching retirement with low savings. As Americans age, family caregivers, such as adult children and spouses, play a critical role in supporting the needs of this population. However, those who provide eldercare may risk their own long-term financial security if they reduce their workforce participation or pay for caregiving expenses. Chapter 6 examines what is known about the size and characteristics of the parental and spousal caregiving population, including differences among women and men; examines the extent to which parental or spousal caregiving affects retirement security; and identifies and discusses policy options and initiatives that could improve caregivers’ retirement security.
Business and Corporate Economics

Legal Framework and Issues Impacting the Business Environment Faced by Foreign Companies Investing in India: Challenges and Opportunities
Luciano Pettoello-Mantovani (UJA, Udyen Jain & Associates, Chartered Accountant, Advisory & Legal Firm, Pune, India)
In series: Economic Issues, Problems and Perspectives
Softcover: 978-1-53615-091-9. $95.00.
e-book: 978-1-53615-092-6. $95.00.
This book deals with the complex and often challenging process for international companies in expanding their business through investing in the Indian emerging market. The process of globalization has allowed for the progressive fading of economic, commercial, and technological boundaries. This has resulted in Multinational firms or enterprises becoming increasingly referred to as key players in the world market over the course of the past fifty years. Inward Foreign Direct Investment flows have increased significantly, not only worldwide, but specifically towards newly-industrialized countries such as India. They are focused on trying to attract foreign investments, due to the lack of domestic savings, and thus as a stable means of foreign capital inflow. In addition to this, there are multiple, other positive effects on macroeconomic variables, such as productivity, production capacity, level of employment, factor prices, technological know-how, and overall economic growth.
Corporations and firms, on the other hand, internationalize towards developing countries in an effort to seek and reap the multiple benefits found in these destination countries. Such benefits include reduced production costs, given by lower relative wages and country endowment of resources, as well as market expansion possibilities. The scope of their needs is determined by the type of strategy adopted, which can distinguish between market seeking, resource seeking, efficiency seeking and strategic investments. The Indian market offers relatively low-cost labor, an enormous pool of possible consumers and many other benefits. When time is taken to fully understand the characteristics of the country and its business culture one can extract the huge rewards. If on the other hand, investors make quick decisions and do not fully review all aspects which might create a risk, the investment may result in serious and substantial failures with large losses of capital. As in many developing countries, Indian laws and regulations are constantly evolving. These laws reflect the political compromise needed to balance the complex and conflicting demands of multiple constituencies. The result of this compromise is a high turnover of laws and regulations which, among other things, are passed through a trial and error basis. This entails that ineffective and inefficient laws may be passed and then substituted once they are tested as not working, having unintended consequences and being impracticable. The constant change and poor formulation leave, at times, room for interpretation especially by lower levels of government officials leading in turn to the possibility of corruptions. This, together with the inefficient judiciary, due not to its quality, but to the extensive time in court cases as well as non-streamlined and improperly implemented process and regulations, leads the investor to a perceive low protection and high risk throughout many phases of the investment. The book offers a useful overview for foreign enterprises on the complex, sometimes intricate process of investing in India, assisting them in gathering great opportunities through overtaking challenges.

Economic Development

A Discourse on Economic Development
Kartik Roy (East-West Centre for Cultural and Economic Studies, Bond University, Australia; University of Queensland, Australia) and Cal Clark (Emeritus Professor of Political Science, Auburn University, Auburn, AL, US)
In series: Readings in World Development
Hardcover: 978-1-53614-842-8. $160.00.
A Discourse on Economic Development is based on two recently published books by Kartik Roy. Governance Institutions and Economic Development: Emerging China, India, East Asia presented an in-depth analysis of the reasons for successes and failures of these nations’ developmental efforts. Economic, Environmental and Political Governance in China, Japan, India, Brazil, Korea, Indonesia, Thailand, Malaysia, Singapore and Vietnam brought acknowledged the urgency of the need for countries’ political leaders to follow the teachings of Kautilya, Confucius, Ibn Khaldun, Karl Marx and Mahatma Gandhi and to make serious efforts to implement those lessons in practice. It is worth noting here Mancur Olson’s famous remarks that economic decisions are unlikely to be taken in the collective interest of individuals due to
bargaining costs and the problem of free riders, unless they are members of small groups. Such a coalition of self-interest individuals is likely to try to redistribute income towards itself instead of working to raise efficiency and national income for the full benefit of the entire population and country. Hence, the authors feel that it is more likely that in all democracies rather than in autocracies, members of the ministry will form Olson’s coalition of self-interest fulfilling persons who are semi-literate, have rarely been engaged in any income earning activity, and who are adept at taking recourse to dishonest means to fill up their pockets, as well as to attain glory, and who have no knowledge of the teachings of Kautilya, Confucius, Khalidun, Marx, Gandhi and other great men of the past. Likewise, they will have no interest in their implementation on practice. In this book, the authors have made an effort to create a synergy between the theory and practice in economic development.

Economic Theory

Value Theory: Is There Still Any Value in It? Revisiting Value and Valuation in a Globalising Digital World
Peter Herrmann (University of Eastern Finland, Department of Social Sciences, Eastern Finland, Finland; Corvinus University, Faculty of Economics, Institute of World Economy, Budapest, Hungary)
In series: Applied Social Studies - Recent Developments, International and Comparative Perspectives
Edited by: Peter Herrmann, Corvinus University, Budapest, Hungary and University of Eastern Finland (UEF), Kuopio, Finland
2019.
Softcover: 978-1-53616-302-5. $95.00.
e-book: 978-1-53616-303-2. $95.00.
The theory of value is probably the most disputed feature of Marx’ political economy. While mostly another problem – namely the issue of transformation – is addressed. Two particular reasons for this contestation are the following: • it stands at the centre of marking the political of political economy • it is cross-cutting with respect to the micro- and macro-level and especially the ‘personal/individual’ and the ‘societal/institutional’ aspects of economic thinking. In addition, some illusionary reasoning, suggesting that we are all better off than we had been 10, 50 or 100 years ago, remains more in the vein of a ‘Yes, we can’ supposition, not arriving in reality. Furthermore, the questionable character comes even more to the fore as we witness again the existence of a group of plutocrats (Freeland, 2012), a class of superrich whose affluence is beyond reason and even imagination. However, at the core stands an obviously far-reaching change of the mode of production. Notwithstanding the critique then and now, there are good reasons to emphasise the usefulness of the theory of value. These will be taken up by exploring explicitly the tensions mentioned, and discussing them against the background of the contemporary shift within the capitalist mode of production. Marxism, in this light, is instrumental for the analysis of globalisation as it allows a clearer understanding not least of the emergence of poverty chains and the role of the capitalist state as an institution that maintains centre-periphery patterns of inequality within the productive sphere. Furthermore, we can find here at least clues for answers Marxism has when it comes to fighting for societal change.

Political Economics

Modelling Multidisciplinary Causes of the Greek Crisis: A Conceptual Analysis
Janine Mukuddem-Petersen (Chair, UCT GSB Postgraduate Committee, Graduate School of Business, University of Cape Town, Cape Town, South Africa)
In series: Economic Issues, Problems and Perspectives
The ongoing Greek crisis has been the subject of immense scholarly interest and debate since it erupted in 2009. Vast amounts of research from a number of disciplines have attempted to explain the causes of the crisis, with a great variety of approaches adopted in doing so. Unfortunately, there has been little effort to develop a comprehensive cross-disciplinary framework for understanding how the crisis came about. This study has ‘bridged the divide’ by developing such a cross-disciplinary conceptual model for the causes of the Greek crisis. The literature review process revealed that studies from the political science, public administration, economics, financial economics and monetary economics disciplines contained a range of explanations for the occurrence of the Greek crisis. Qualitative content analysis techniques were used to synthesise the findings from these five fields into a cross-disciplinary conceptual model. By integrating the findings from
the five disciplines above, a number of new insights were generated. Firstly, it was found that the crisis manifested primarily as a collapse of confidence in the ability of the Greek state to pay its debts. Secondly, that high sovereign debt levels, internal political opposition to reform, a deterioration of competitiveness of the Greek economy, the existence of destructive political institutions and the possibility of an exit from the European Monetary Union acted as key causes (amongst others) for the collapse of confidence in Greek sovereign bonds. Finally, a number of implications for policymakers in Greece and elsewhere were found and elaborated upon.

Entrepreneurship

The Power of Entrepreneurship
Daan Dirksen

In series: Business Issues, Competition and Entrepreneurship
Hardcover: 978-1-53615-114-5. $230.00.

The Power of Entrepreneurship begins by addressing the idea that the rejection of change is likely to occur when opportunity seizing by analyzer organization is accompanied by proactive strategic typologies. Strategic changes in digitization are also discussed in respect to the case of the Microsoft Corporation strategic transformation initiated with the goal of moving beyond the niche associated with Office products to outstrip the market of cloud technologies from its leader, Amazon Web Services. The authors go on to explore how the discipline of entrepreneurship has evolved, the role of entrepreneurship education, and how research skills could facilitate the development of entrepreneurial culture and innovation. This compilation also measures entrepreneurship performance in Vietnam at the national level through a new approach, the Global Entrepreneurship Development Index. Results indicate that nine bottlenecks of fourteen pillars are performing with very low scores, in which the highest policy priority is given for including risk acceptance, opportunity perception, internationalization and technology absorption. Brief reviews of the evolution of local economic development policies and practices and of quantitative entrepreneurial research are followed by a case study to reflect the value of such analyses. It examines proportional relationships between demographics, entrepreneurial development and economics and provides evidence that entrepreneurship in South Africa is not limited. The next article emphasizes the dilemma proposed by the new concept of “acadepreneurship” especially its two facets of intrapreneuring (intrapreneurship) and extrapreneuring (extrapreneurship). The authors stress the boundaries of “academic entrepreneurship” and draw a conceptual framework of the neologisms of “acadepreneurship” and “acadepreneur”. Aspiring entrepreneurs aiming to launch high-expectation start-ups can be at a critical juncture. Five research propositions are offered that intend to form the basis for scholars carrying out further studies on this matter. Practitioners may also leverage on the insights provided in order to facilitate the creation and development of knowledge ecosystems for high-expectation start-ups. The closing paper examines (1) whether “social entrepreneurship” is an oxymoron, and (2) the characteristics and sources of social entrepreneurship knowledge.

Finance and Investments

Key Government Reports on Business and Finance for June 2019
Yolande Asselin

In series: Business, Technology and Finance
2020.
Hardcover: 978-1-53616-566-1. $195.00.

This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of June, grouped according to the topic: Business and Finance.

International Finance

Foreign Exchange Rates and International Finance
John N. Kallianiotis (Economics/Finance Department, The Arthur J. Kania School of Management, University of Scranton, Scranton, PA, US)

In series: Business, Technology and Finance
2020.
Hardcover: 978-1-53616-550-0. $310.00.

This book deals with international finance and the role of the foreign exchange rates in our economies. It is constituted from twelve chapters, from the history of our monetary system to the balance of payments and from the exchange rates to
multinational businesses and their management. The internationalization of business, the interdependence and conflicts among nations, the enormous capital mobility, the foreign exchange market that provides the payments and instruments for all these international transactions, the risk that is involved among markets, economies, and businesses all require studies, instruments, insurance policies, management, correct public policies, and empirical work on international financial transactions, cultures, and the different value systems, so a finance or political science (undergraduate or graduate) student, a professional, a trader, or any other individual interested in international business could be able to deal with all these conflicts, challenges, and adversities, which their trend is incremental. Also, the role of the exchange rate and trade policies in improving the trade account and the social welfare of the country’s citizens are considered and examined in detail. Further, the determination and forecasting of the exchange rate are analyzed by using economic theories, mathematics and statistical models. The foreign exchange exposure (risk) is measured and managed by using hedging techniques. The multinational corporations and their cost of capital is covered extensively. The multinational capital budgeting of our MNCs is taking place and the criteria of evaluating the foreign projects are discussed, too. The foreign direct investments (FDI), which increase business, income, and employment in the host countries, the international portfolio theory and its effect on risk minimization from this global diversification are analyzed. The sources and instruments of financing international trade and multinational corporations are presented with the role of commercial banks, money market, and international transportation. Lastly, the political risk involved in different countries is covered and assessed. Thus, this book can be used by itself as a complete text on international finance or can be employed to supplement a reference book devoted to international finance, multinational business, or international financial economics.

**Personal Finance**

**Loan Forgiveness and Loan Repayment Programs**

*Virgil Davidson*

*In series: Banks and Banking Developments*


Hardcover: 978-1-53615-181-7. $95.00.

Student loan forgiveness and loan repayment programs provide borrowers a means of having all or part of their student loan debt forgiven or repaid in exchange for work or service in specific fields or professions or following a prolonged period during which their student loan debt burden is high relative to their income. In both loan forgiveness and loan repayment programs, borrowers typically qualify for benefits by working or serving in certain capacities for a specified period or by satisfying other program requirements over an extended term. Upon qualifying for benefits, some or all of a borrower’s student loan debt is forgiven or paid on his or her behalf. Some of these programs are intended to support goals such as providing a financial incentive to encourage individuals to enter into and/or remain in a particular profession or public service. One such federal program that has received considerable attention in recent years is the Public Service Loan Forgiveness (PSLF) program. The PSLF program forgives borrowers’ federal student loans after they make at least 10 years of qualifying payments while working for certain public service employers.

**Financial Economics**

**Federal Grants: Background, Issues, and Management**

*Donna Parker*

*In series: Government Procedures and Operations*


Hardcover: 978-1-53615-521-1. $230.00.

Chapter 1 is intended for Congressional members and staff assisting grant seekers in districts and states and covers writing proposals for both government and private foundation grants. In preparation for writing a proposal, the chapter first discusses preliminary information gathering and preparation, developing ideas for the proposal, gathering community support, identifying funding resources, and seeking preliminary review of the proposal and support of relevant administrative officials. Members of Congress receive frequent requests from grant seekers needing funds for projects in districts and states. As reported in chapter 2, the congressional office should first determine its priorities regarding the appropriate assistance to give constituents, from providing information on grants programs to active advocacy of projects. Chapter 3 describes key sources of information on government and private funding, and outlines eligibility for federal grants. The subcommittee on intergovernmental affairs held a hearing to examine the management of Federal grant awards. Chapter 4 reports on the findings. Chapter 5 provides a brief overview of the federal government’s authority to impose conditions on federal grant funding. It explains the constitutional basis of the federal government’s power to condition funds, as well as the limits on this power that have been recognized in a long line of U.S. Supreme Court cases. Chapter 6 provides information on current federal grants and loans that fund emergency communications, information on the
application process, eligible communications activities, and other resources they can provide to constituents seeking federal
grant and loan funding to support emergency communications projects. Chapter 7 provides a historical synopsis of the
evolving nature of the federal grants-in-aid system, focusing on the role Congress has played in defining the system’s
scope and nature. It begins with an overview of the contemporary federal grants-in-aid system and then examines its
evolution over time, focusing on the internal and external factors that have influenced congressional decisions concerning
the system’s development. Chapter 8 discusses several questions that might be raised regarding the implementation of the
executive order by federal grant-making agencies (also known as “federal awarding agencies) and the impact on federal
grant funding for designated sanctuary jurisdictions. Each year, Congress and the Administration provide funding for a
variety of grant programs through the Department of Justice (DOJ). Chapter 9 provides an overview of congressional
actions to fund DOJ’s grant programs through these accounts for FY2018.

Foreign Exchange Market Intervention: Market Microstructure Models and Empirical Investigations
Nevi Danila (Victoria University, Melbourne, Australia) and Sardar M.N. Islam (Victoria University, Melbourne, Australia)
In series: Financial Institutions and Services
Hardcover: 978-1-53614-710-0, $160.00.
Foreign Exchange Market Intervention: Market Microstructure Models and Empirical Investigations investigates the effectiveness of government intervention from the market
microstructure perspective, especially focusing on its impact concerning the setting of bid-ask exchange rates (from the Plaza Agreement to the Louvre Accord). The authors
test the effect of intervention on the dealer’s behavior in controlling his/her inventory to
set the quotation of exchange rates. The authors also examine the relative importance of
the inventory cost in three components of the bid-ask spread. Finally, they analyze the
impact of intervention on a spread. This book develops new econometric models which
have produced results for sound FOREX and financial management strategies. This book is multi-disciplinary, technical
and specialized, but focused on contemporary and emerging issues in FOREX and financial markets in addressing the
issues of financial markets and for theory and hypothesis development which have general implications for finance theory.

Investment, Banking and Risk Management

Financial Issues: Banking, Consumer Credit and Financial Protection
Jantiena Treurniet
In series: Banks and Banking Developments
Hardcover: 978-1-53616-227-1, $195.00.
e-book: 978-1-53616-228-8, $195.00.
Regulation of the banking industry has undergone substantial changes over the past decade. In response to the 2007-2009
financial crisis, many new bank regulations were implemented pursuant to the Dodd-Frank Wall Street Reform and
Consumer Protection Act of 2010 or under the existing authorities of bank regulators to address apparent weaknesses in the
regulatory regime. Chapter 1 provides a broad overview of selected banking-related issues, including issues related to
“safety and soundness” regulation, consumer protection, community banks, large banks, what type of companies should be
able to establish banks, and recent market and economic trends. Chapter 2 provides a broad overview of various banking
topics—key concepts in banking, overview of regulation, recent banking legislation, and policy issues. Banks generally
must comply with a variety of requirements to hold minimum levels of capital. Chapter 3 provides a brief overview of these
requirements and examines related policy issues. Chapter 4 first provides background information on the consumer data
industry and various specialty areas. It then examines one prominent specialty area—consumer scoring—and describes
various factors used to calculate credit scores. Next, it provides a general description of the current regulatory framework of
the consumer data industry. Finally, the chapter discusses selected policy issues pertaining to consumer data reports.
Chapter 5 provides an overview of consumer lending markets, pricing, and legislative efforts designed to facilitate efficient
credit allocation and pricing. The 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank; P.L.
111-203) established the Bureau of Consumer Financial Protection (CFPB) to implement and enforce federal consumer
financial law while ensuring consumers can access financial products and services as reported in chapter 6. Chapter 7
reports on the results of the audits of the fiscal years 2017 and 2016 financial statements of the Bureau of Consumer
Financial Protection, known as the Consumer Financial Protection Bureau (CFPB), which is incorporated in the enclosed
Financial Report of the Consumer Financial Protection Bureau for Fiscal Year 2017. Chapter 8 provides an overview of
how accounting and auditing standards are created and regulated in the private sector, the federal government, and state
and local governments.
**Tax Law**

**A Closer Look at Tax Credits**

*Jacquelyn Ward*

In series: *Financial Institutions and Services*


Hardcover: 978-1-53615-550-1. $195.00.


A tax credit is a tax incentive which allows certain taxpayers to subtract the amount of the credit from the total taxes they owe. This book explores some of the different tax credits that are currently available including credits for child and dependent care, adoption benefits, energy and housing credits, and income and work credits. Chapter 1 provides an overview of the child tax credit under current law, including temporary changes made by the 2017 tax revision. There are two tax provisions that subsidize the child and dependent care expenses of working parents: the child and dependent care tax credit (CDCTC) and the exclusion for employer-sponsored child and dependent care. Chapter 2 provides a general overview of these two tax benefits, focusing on eligibility requirements and benefit calculation. Chapter 3 first briefly summarizes key components of the CDCTC, including reviewing eligibility requirements and how the credit is calculated. It then provides estimates of selected characteristics of families—such as income, number of children, marital status, and child care expenses—that claim the credit and, where appropriate, contrasts them with families that do not claim the credit. Chapter 4 focuses on federal adoption tax benefits, which consist of an adoption tax credit and an income tax exclusion for employer-provided adoption assistance. Chapter 5 explores one policy option for promoting residential energy efficiency: tax credits. It begins by providing an overview of the current residential energy-efficiency tax credits. It then goes on to provide an economic rationale for residential energy-efficiency tax incentives, introducing the concept of "market failures" and "market barriers" which may lead to suboptimal or "economically inefficient" investment in energy-efficiency technologies. Chapter 6 provides a brief overview of the renewable electricity PTC. The first section describes the credit. The second section provides a legislative history. The third section presents data on PTC claims and discusses the revenue consequences of the credit. The fourth section briefly considers some of the economic and policy considerations related to the credit. The chapter concludes by briefly noting policy options related to the PTC. The low-income housing tax credit (LIHTC) program is one of the federal government’s primary policy tools for encouraging the development and rehabilitation of affordable rental housing. As discussed in chapter 7, these nonrefundable federal housing tax credits are awarded to developers of qualified rental projects via a competitive application process administered by state housing finance authorities. Chapter 8 provides both an in-depth description of The American Opportunity Tax Credit (AOTC) and an analysis of its economic impact. This chapter is organized to first provide an overview of the AOTC, followed by a legislative history that highlights the evolution of education tax credits from proposals in the 1960s through the recent permanent extension of the AOTC at the end of 2015. This chapter then analyzes the credit by looking at who claims the credit, the effect education tax credits have on increasing attendance at higher education institutions, and administrative issues with the AOTC. Finally, this chapter concludes with a brief overview of various policy options. Chapter 9 provides a general overview of the earned income tax credit (EITC). The chapter then summarizes the key legislative changes to the credit and provides analysis of some of the congressional intentions behind these changes. Chapter 10 looks at the Work Opportunity Tax Credit (WOTC). The WOTC is a provision of the Internal Revenue Code that allows employers that hire individuals with certain personal characteristics, including veterans, recipients of certain public benefits, or other specified populations, to claim a tax credit equal to a portion of the wages paid to those individuals.

**Industries**

**Tourism and Hospitality**

**The Anthropology of Tourism Security**

*M Maximiliano E. Korstanje (University of Palermo, Buenos Aires, Argentina; Visiting Fellow at CERS University of Leeds, UK)*

In series: *Hospitality, Tourism and Marketing Studies*

2019.

Softcover: 978-1-53616-134-2. $95.00.


As a concept, tourism security has recently occupied a central position not only in tourism and hospitality fields but also in the social imaginary. The post-Westphalian nation states devote considerable energy and resources to fight against the radicalized groups but the fact is that terrorism still remains a big problem and is very hard to resolve. Unlike other past decades, today foreign tourists and journalists are targeted by these radical cells. In view of this, a book, which revolves around tourism security, is not only necessary but represents an unquestionable urgency. In this editorial project, the authors gather 9 seminal chapters which discuss—from different perspectives—the anthropological nature of tourism security as well as the next steps to follow in the years to come. Oscillating from ISIS and terrorism to climate change, without mentioning security on board of cruises or health issues, this book situates as a must-read work, which sheds light on the dichotomies between the needs of further security and the attractiveness of destinations.
Management

Advances in Business and Management. Volume 16
William D. Nelson
In series: Advances in Business and Management
Hardcover: 978-1-53615-573-0. $250.00.
The opening chapter of Advances in Business and Management. Volume 16 studies the determinants of the unemployment duration for university graduates in Spain. The results of these studies showed that the duration of unemployment was significantly associated with the graduate’s age, participation in internship programs, field of study, type of university, and gender. Next, the authors utilize the empirically validated assumptions of two contemporary theories on team motivation (social identity theory and the theory on joint production motivation) to provide an organizational behavior perspective to the jettisoning of Japanese management philosophy. This compilation also analyzes the political struggle that took place during 1994-1995 in Israel’s Histadrut (General Federation of Labor) under the leadership of Haim Ramon that eventually caused goal transformation within the union. The study in the following chapter aims to identify the impact of social media on the people of Bangladesh as consumers. The authors go on to focus on recent changes in business communication in the past two decades from a sociolinguistics point of view. Later, it is proposed that given the exponential increase of internet users, it is important to study how enterprises have been working and innovating their online communication tools, as well understand how they can improve the communication through these online channels, in order to cover increasing competition in the different business areas. Additionally, this collection demonstrates that there are significant differences in manners of communication that appear to be a very important factor in making some organizations more successful than others. The concluding chapter suggests a combination of a single cost-plus transfer price and the pragmatic process of negotiation assuming non-linear net average revenue curves.

Business and Management Issues in the Global and Digital Era: Indonesian Perspectives
Arief Wibisono Lubis, PhD, Irwan Adi Ekaputra, Zafrin Ananto Husodo, PhD, Beta Yulianti Gitaharie and Elvia R Shauki, PhD (Faculty of Economics and Business, Universitas Indonesia, Gedung Dekanat FEB UI Kampus Widjojo Nitisastro, Depok, West Java, Indonesia)
In series: Business, Technology and Finance
2020.
Dear Researchers/Students/Librarians, and Practitioners, We are pleased to offer you with the following book titled “Business and Management Issues in the Global and Digital Era: Indonesian Perspectives” written by prominent authors who are specialized in the area from the Faculty of Economics and Business, Universitas Indonesia, and other top-ranked universities in Indonesia. The book covers some most recent studies and updated issues in the following areas: 1. Finance: The articles in this chapter discuss contemporary issues in finance, given the rise of regional economic integration and digitalization. Some of the topics covered include (among others) the nexus among internalization, capital investment, and firm performance in several ASEAN countries; and operational risk management process in a peer-to-peer lending company in agricultural sector. 2. Marketing: It is interesting to examine marketing dynamics in the global and digital era. Therefore, several articles in this chapter aim to investigate consumers’ behavior in mobile payment acceptance and online marketplace. This book is strongly recommended to be used as a reference for researchers, students, and also business practitioners not only in Indonesia, but also wider audiences that required deeper insights/thoughts in dynamic, changing and global emerging market (i.e. in Indonesia).

Continuous Improvement: Insights for a Transformative World
Cam Caldwell, PhD (University of Illinois Springfield, Illinois, US) and Verl Anderson, DBA (Dixie State University, Professor of Management, St. George, UT, US)
In series: Management Science - Theory and Applications
2020.
Softcover: 978-1-53616-531-9. $82.00.
e-book: 978-1-53616-532-6. $82.00.
In today’s knowledge-, wisdom-, and information-based world, the challenge facing leaders and organizations is to be able to obtain employee commitment and to apply that dedication to constant improvement and change. In a world where technology is rapidly improving and knowledge is increasing exponentially in virtually every field, the ability to adapt and to innovate is essential to organization success and individual development. This book looks at continuous improvement at the individual, group, organizational, and societal levels and identifies commonalities and keys to success. It adopts a “transformative” perspective towards leadership, management philosophy, duties owed, and the obligation to constantly change. The authors/editors have written extensively about the need for leaders and organizations to refine their approach to change and improvement and this book combines their insights into one consolidated explanation.
Crisis Management: Introducing Companies Organizational Reactivity and Flexibility
Mladen Pecujlija (Faculty of Technical Sciences, Novi Sad, Serbia) and Djordje Cosic (Faculty of Technical Sciences, Novi Sad, Serbia)

In series: Business Issues, Competition and Entrepreneurship
Softcover: 978-1-53615-439-9. $82.00.
e-book: 978-1-53615-440-5. $82.00.

In all societies, the normal flow of life is occasionally interrupted by critical episodes, accompanied by a sense of threat and insecurity, challenging the way in which people understand the world around them. Such situations, called crises, can be caused by natural forces (earthquakes, tsunamis, storm winds, torrential rain, snowstorms, avalanches, epidemics), intentional actions of “others”, i.e. various enemies inside or outside the society (international conflicts and war, terrorist attacks), and human errors in managing technology, to name a few. But their roots may also be in poorly functioning socio-technical and administrative systems (infrastructure breakdowns, industrial accidents, economic crises, and political scandals). Historically, we can say that crises are increasing in number and becoming more diverse by nature. In the early development of civilization, the main threat came from nature and conflicts between human groups, whereas in modern post-industrial societies, these are joined by risks coming from engineering and technology. In addition to old crises whose causes, consequences and time curves are more or less known, modern crises also appear, against which the human mind is powerless, organizational capacities are insufficient, and which make the public existentially concerned.

Post-Investment Monitoring. Intercultural Synergy Valuation
Liviu Warter, PhD (Center for Socio-Economic Studies and Multiculturalism, Iasi, Romania)

In series: Business Issues, Competition and Entrepreneurship
Hardcover: 978-1-53615-959-2. $160.00.

This monograph is focused on post-investment issues, particularly on intercultural synergy, and M&A performance. The M&A reasons are the result of globalization, of the need of growth and of achieving synergies. Most of the professionals consider that M&A is one of the most significant business phenomena in the past decades, but warn about the dangers of M&A. The most challenging part of the M&A process is the integration of two entities that present different organizational and national cultures. This monograph emphasizes the relationship between culture, post-merger integration processes, and M&A performance. This monograph exerts to find an explanation for M&A performance in terms of the impact that cultural differences have on the post-merger integration process. It emphasizes the role of post-investment monitoring and intercultural synergies achievement. This monograph offers an extensive insight of the M&A process inasmuch M&As are a complex domain demanding an interdisciplinary approach. This book is seeking to deepen the apprehension of the impact of cultural differences on M&A performance. M&A performance can be characterized by ambiguity of the concept and a lack of concurrence on measurement procedures. This monograph reveals that cultural synergy can be produced by similarities in organizations but at once by differences. The empirical results deliver contradictory outcomes. Intercultural synergy might be highly significant after the merger or on the contrary have an insignificant effect on firms’ performance or even a negative impact. The findings regarding the cross-cultural integration aspects are contradictory and the relation between M&A performance and intercultural synergy is still to be refined. The findings of this book suggest that intercultural synergy is a significant and controversial issue of cross border M&As. Some inconsistent results suggest the need for further research on post-merger integration. The main goal of this book is to uncover intercultural issues that managers encountered during the post-investment phase and they should have discovered during the pre-investment phase. Intercultural synergy has a strong impact on M&A. Both national and organizational cultures are determinants for maximizing the intercultural synergy. This monograph integrates the research on national, organizational and professional culture, into a theory of M&A performance and outcome. It investigates not only the outcomes and intercultural synergy but also the perception on these issues. In the area of intercultural management, this book reveals that the culture clusters make for a very helpful and strong tool. It appears that national culture might influence perceptions on M&A in some culture clusters much more than in others. M&A professionals may benefit from a deeper understanding of cultural values that shape the post-merger integration process and implicitly the M&A performance. The companies that minimize the importance of post-investment monitoring expose themselves to a higher risk of failure. The expectation of the author of this monograph is that the conclusions would help forewarn M&A scholars and practitioners of the need to thoroughly understand the cultural issues influencing the post-M&A processes. This monograph will be useful for academic researchers, postgraduate students, for MBA/Executive Education and for practitioners.
Marking and Sales

Future-Focused Strategic Marketing
Babu John Mariadoss, Ph.D. (Department of Marketing and International Business, Carson College of Business, Washington State University, Pullman, WA, US), and Raj Echambadi, Ph.D. (Dunton Family Dean, D’Amore-McKim School of Business, Northeastern University, Boston, MA, USA)

In series: Marketing and Operations Management Research

2019.
e-book: 978-1-53616-170-0. $230.00.

The business world is changing rapidly, requiring organizations to be more competitive and customer-centric. Applied technologies have provided opportunities for nascent startups to disrupt established business models that hadn’t fundamentally changed for decades. Technologies now enable work to be separated from time and space. Technologies have also made certain occupations obsolete while creating new ones. In this changing landscape marked by hyper-competition, firms are looking for new ways to operate and manage their strategies in order to remain extremely agile, nimble, and customer-centric. Inherently, strategic marketing fuses theoretical rigor with relevance to the real world. Marketing strategies informed through insights based on quality academic research help firms develop relevant organization-wide initiatives for both enhanced value creation and subsequent value capture thereby providing bottom-line impact. The goal of ‘Future-Focused Strategic Marketing’ is to bring together academic and practitioner audiences in order to highlight key strategic choices for firms operating in the changed landscape. So the focus is not only on the specific marketing activities performed by the firm utilizing their capabilities, but also relevant organizational adjustments and shifts that need to be performed in order to ensure success of firm strategies in a wide variety of contexts. ‘Future-Focused Strategic Marketing’ is positioned as an introductory use-inspired primer in Strategic Marketing for a variety of audiences.

We intend this book to stimulate novel ideas in marketing strategy scholars including doctoral students to help create cutting-edge research agendas that help shape both firm strategies and public policies. Marketing practitioners will find the relevance of the book appealing as it helps firms to both execute and sustain value in the longer-term. This focus on rigorous and relevant research has inspired the themes for the various book chapters including (i) transforming the organization, (ii) examining structure, culture, and identity issues, and (iii) specifying the relationship between capabilities and performance.

Consumer Behavior

Consumer Protection: Recalls, Data Security and Congressional Issues
Ralf Schaefer

In series: Privacy and Identity Protection


Consumers, manufacturers, and auto dealers use publicly available auto recall information differently. Chapter 1 addresses: how consumers and industry stakeholders use such information and how easy to use do consumers find the auto recall areas of NHTSA.gov, among other objectives. Ticket pricing, resale activity, and fees for events vary. Chapter 2 review issues around online ticket sales including what is known about online ticket sales, consumer protection issues related to such sales, and potential advantages and disadvantages of selected approaches to address these issues. The Telephone Consumer Protection Act of 1991 (TCPA) regulates robocalls. A robocall, also known as “voice broadcasting,” is any telephone call that delivers a prerecorded message using an automatic (computerized) telephone dialing system, more commonly referred to as an automatic dialer or “autodialer.” Chapter 3 addresses robocalls that are both illegal under the TCPA and intended to defraud, not robocalls that are defined only as illegal. Chapter 4 addresses FTC’s role and authorities for overseeing Internet privacy, stakeholders’ views on potential actions to enhance federal oversight of consumers’ Internet privacy, and breaches of personally identifiable information. Chapter 5 provides a brief overview of federal regulation of Wells Fargo and a timeline of key events involving the company since the scandal’s disclosure. It then discusses a few relevant policy issues, including consumer protection and corporate governance, and highlights recent instances of congressional oversight of the bank. Chapter 6 summarizes measures FTC has taken to enforce consumer reporting agencies (CRA) compliance with requirements to protect consumer information, measures CFPB has taken to ensure CRA protection of consumer information, and actions consumers can take after a breach. Chapter 7 examines issues related to federal oversight of CRAs. This chapter discusses measures FTC has taken to enforce CRA compliance with requirements to protect consumer information, measures CFPB has taken to ensure CRA protection of consumer information, and actions consumers can take after a breach. Chapter 8 reviews gender-related price differences for consumer goods and services sold in the United States. Chapter 9 summarizes P.L. 115-174 as enacted and highlights major policy proposals of the legislation.
Project Management

Sustainable City Logistics Planning: Methods and Applications. Volume 1
Anjali Awasthi - CIISE-EV 7.640, Concordia University, Montreal, Quebec, Canada
In series: Management Science - Theory and Applications
2020.
Hardcover: 978-1-53616-521-0. $160.00.
City logistics planning is vital to improve goods transport in urban areas. It involves consolidation and coordination of goods transport activities to reduce the negative impacts of freight transport on city residents and their environment. The book presents novel and innovative approaches in the area of sustainable city logistics planning and is composed of three volumes. The first volume addresses key problem areas related to city logistics assessment and evaluation, mobility management, vehicle routing, demand management, smart city solutions, sustainable supply chain management, risk management, intelligent transportation systems, delivery location optimization, electricity planning, and transit policy simulation. The second volume is dedicated to electric vehicle charging, stakeholder engagement, e-commerce deliveries, corporate social responsibility, urban freight data collection, dynamic project management, postal logistics, sustainable hub location, urban freight transport planning, and stakeholder mobilization. The third volume deals with truck route choice planning, empty container repositioning, logistics planning under disruption, dynamic risk sensitive sequential decision-making, parking revenue management, sustainable parcel delivery planning, and smart multi-purpose utility tunnels. A variety of methods based on systems modeling and simulation, optimization, and data mining are proposed. Survey studies, best practices, state of the art, and practical applications complement the presented theoretical approaches. The book will serve as a useful resource to academicians and practitioners working in the area.

Sustainable City Logistics Planning: Methods and Applications. Volume 2
Anjali Awasthi (Concordia University, Montreal, Quebec, Canada)
In series: Management Science - Theory and Applications
2020.
Hardcover: 978-1-53616-561-6. $160.00.
City logistics planning is vital to improve goods transport in urban areas. It involves consolidation and coordination of goods transport activities to reduce the negative impacts of freight transport on city residents and their environment. The first volume addresses key problem areas related to city logistics assessment and evaluation, mobility management, vehicle routing, demand management, smart city solutions, sustainable supply chain management, risk management, intelligent transportation systems, delivery location optimization, electricity planning, and transit policy simulation. The second volume is dedicated to electric vehicle charging, stakeholder engagement, e-commerce deliveries, corporate social responsibility, urban freight data collection, dynamic project management, postal logistics, sustainable hub location, urban freight transport planning, and stakeholder mobilization. The third volume deals with truck route choice planning, empty container repositioning, logistics planning under disruption, dynamic risk sensitive sequential decision-making, parking revenue management, sustainable parcel delivery planning, and smart multi-purpose utility tunnels. A variety of methods based on systems modeling and simulation, optimization, and data mining are proposed. Survey studies, best practices, state of the art, and practical applications complement the presented theoretical approaches. The book will serve as a useful resource to academicians and practitioners working in the area.

The Project Administrator: Perspectives to Project Support Services
Gerrit van der Waldt (Department of Public Governance, North-West University, Potchefstroom, South Africa)
In series: Marketing and Operations Management Research
2020.
Softcover: 978-1-53616-497-8. $95.00.
e-book: 978-1-53616-498-5. $95.00.
The application of projects in various organizational settings and for multiple purposes is accelerating at a rapid pace. Increasingly public and private sector institutions and enterprises appreciate the value of projects to render services and products on time, within budget and according to quality specifications. The ultimate success of projects is, however, dependent on the professional expertise of dedicated support staff. The role and responsibilities of project administrators are therefore rapidly growing to establish administrative support structures, systems and processes, as well as adequate project controls, document management, and stakeholder communication. Project host organizations, project managers and governance bodies, such as steering committees, need to be strongly supported to ensure that the hands of key role-players are strengthened through accurate record-keeping, archival services, project management information systems, control systems, and team support. For this purpose, organizational arrangements such as project management units, project support offices, and project management offices are established to facilitate institutional memory and to embed the principles of a learning organization as far as project best practices are concerned. The body of knowledge of Project
Management is also highly dynamic and is expanding to incorporate the exciting world of project support services. The purpose of this publication is to provide an overview of the nature of project support services with particular reference to the roles and responsibilities of project administrators. The publication covers the following key areas: • the fundamentals of project management including concepts, principles, life cycle phases, PMBOK, and methodologies; • the nature of project support services, including the typical job profile and responsibilities of project administrators; • support through organizational and project governance arrangements; • project planning support; • project controls, reviews, and reporting support; and • project team support and self-management. This publication is a must-read for project practitioners in the field of project support services and business administration, and also serves as an invaluable text book to train project support staff. Various self-assessment exercises and practical examples are included to aid this purpose.

Small Businesses

Entrepreneurship in Small and Medium-Sized Enterprises

Andreas Masouras (Neapolis University, Pafos, Cyprus)

In series: Business Issues, Competition and Entrepreneurship

This book focuses on three key questions and three assumptions, which tackle entrepreneurship and competitiveness through the pillars of young entrepreneurship and innovation in SMEs, always under the lens of the institutional approach. More specifically, the research questions of this study are the following: How do institutions and, in general, institutional processes affect entrepreneurship on the SME level and, hence, competitiveness on the country level, how can the analysis of young entrepreneurship promote our understanding of the overall web of entrepreneurship from an institutional point of view and to what degree do SMEs respond to innovative applications and activities? Moreover, the study takes on the following three research assumptions: The quality of institutions affects the development of entrepreneurship and, hence, a country’s competitive position, small- and medium-sized enterprises are affected by the quality of institutions and institutional inefficiency leads to innovation fatigue. The methodology is based on specific data collection techniques that will answer the questions and assumptions of this study by using both qualitative and quantitative approaches.

Small Business Issues: Contracting, Compliance and Tax Benefits

Andrea Moeller

In series: Business Issues, Competition and Entrepreneurship
Hardcover: 978-1-53615-870-0. $195.00.

Congress has broad authority to impose requirements upon the federal procurement process, that is, the process whereby agencies obtain goods and services from the private sector. One way in which Congress has exercised this authority is by adopting measures to promote contracting and subcontracting between “small businesses” and federal agencies. Chapter 1 describes the various federal programs, requirements, procurement officers, and procurement offices involved in promoting federal contracting and subcontracting with small businesses, small disadvantaged businesses (SDBs), SDBs participating the SBA’s “8(a) Program,” Historically Underutilized Business Zone (HUBZone) small businesses, women-owned small businesses (WOSBs), and service-disabled veteran-owned small businesses (SDVOSBs). Chapter 2 discusses the extent to which selected federal agencies demonstrated compliance with thirteen section 15(k) requirements for OSDBUs and SBPAC review process results. Chapter 3 examines what contracting officers consider when assigning NAICS codes to federal contracts and the status of efforts to clarify code assignment and industry views on NAICS code assignment and the number and outcomes of appeals. Chapter 4 reports on SBA’s development of criteria and guidance on using a risk-based approach for certifying and recertifying HUBZone firms, and SBA’s implementation of the revised policies and procedures for firms located in Puerto Rico. Chapter 5 examines the extent to which SBA and the participating agencies have implemented these benchmarks, including assessing businesses against them and establishing the consequence of not meeting them. The federal tax burden on small firms and its effects on their formation and growth have long been matters of legislative concern for Congress. This abiding interest has helped pave the way for the enactment of a series of tax laws in recent years that included targeted tax relief for a number of small businesses as discussed in chapter 6.
Small Business: Funding, Management and Mentor Programs
Angel Becker
In series: Business Issues, Competition and Entrepreneurship
Hardcover: 978-1-53615-750-5. $230.00.
The Small Business Administration (SBA) administers several types of programs to support small businesses, including loan guaranty and venture capital programs to enhance small business access to capital; contracting programs to increase small business opportunities in federal contracting; direct loan programs for businesses, homeowners, and renters to assist their recovery from natural disasters; and small business management and technical assistance training programs to assist business formation and expansion. Chapter 1 describes the structure and operations of the SBA’s Small Business Investment Company (SBIC) program. Chapter 2 describes the Small Business Investment Company (SBIC) program’s structure and operations, focusing on SBIC eligibility requirements, investment activity, and program statistics. Chapter 3 examines the Small Business Development Centers (SBDCs) and SCORE (formerly the Service Corps of Retired Executives); the SBA’s 7(a), 504/CDC, and Microloan lending programs; and the SBA’s Small Business Investment Company (SBIC) venture capital program. Chapter 4 discusses small business startups’ experiences with the SBA’s management and technical assistance training programs, focusing on Small Business Development Centers (SBDCs), Women Business Centers (WBCs), and SCORE (formerly the Service Corps of Retired Executives); the SBA’s 7(a), 504/CDC, and Microloan lending programs; and the SBA’s Small Business Investment Company (SBIC) venture capital program. Chapter 5 examines how SBA monitors lenders’ compliance with the credit elsewhere requirement, the extent to which SBA evaluates trends in lender credit elsewhere practices, and lenders’ views on the credit elsewhere criteria for 7(a) loans. Chapter 6 provides an overview of the federal government’s various small business mentor-protégé programs.

Small Business: Issues, Programs and Investments
John D. Mijovic
In series: Business Issues, Competition and Entrepreneurship
The world of business education is large and profitable – with over 150,000 students enrolled in graduate business education programs alone each year. This book traces the historical roots of business education, covering seven important time periods which have each contributed key insights into business effectiveness. Despite the apparent tremendous successes suggested by the substantial growth in educating business students, a strong case could be made for the need to make important changes in the

Special Topics

Business Education’s Future: A Transformative Approach
Cam Caldwell (Adjunct Professor, University of Illinois-Springfield, Springfield, IL, US) and Verl Anderson (Professor of Management, Dixie State University, St. George, UT, US)
In series: Business Issues, Competition and Entrepreneurship
The security of federal information systems and data is critical to the nation’s safety, prosperity, and well-being. However, federal systems and networks are inherently at risk because of their complexity, technological diversity, and geographic dispersion. Further, threats to federal information technology (IT) infrastructure continue to grow in number and sophistication, posing a risk to the reliable functioning of our government. A key component of the government’s ability to mitigate and respond to cybersecurity threats is having a qualified, well-trained cybersecurity workforce. The objectives of chapter 1 are to determine the extent to which federal agencies have assigned work roles for positions performing IT, cybersecurity, or cyber-related functions and describe the steps federal agencies took to identify work roles of critical need. As reported in chapter 2, DHS has identified, categorized, and assigned employment codes to its cybersecurity positions and identified its cybersecurity workforce areas of critical need. Chapter 3 assessed whether: OPM developed a coding structure and procedures for assigning codes to cybersecurity positions and submitted a progress report to Congress; CFO Act agencies submitted complete, reliable baseline assessments of their cybersecurity workforces; and CFO Act agencies established procedures to assign codes to cybersecurity positions.

**Economic Doctrines: The Origins**  
*Avtandil Silagadze, Tamar Atanelishvili and Nodar Silagadze*  
*(Iv.javakhishvili Tbilisi State University, Tbilisi, Georgia)*  
In series: *Georgian Classics*  
Softcover: 978-1-53615-375-0. $95.00.  
This book presents research in the old era about the individual elements of economic doctrines that form the basis of the formation of economic science. The aim of the first chapter is to consider the most important economic views (State economic function, budget model, statistics, ownership, etc.) in the ancient epoch (Egypt, Iraq, China, India, etc.). The second chapter deals with the most prominent economic considerations (economics, labor division, money, goods, property, management, etc.) of the famous representatives of the ancient epoch (Ancient Greece, Old Rome), although they did not specifically research economic issues (especially in ancient Greece). The third chapter reveals "mature" economic considerations formed in Western Europe, Kievan Rus’, Georgia, Russia, Tunisia etc.) that have finally laid the foundation for economics as a science.

**Key Congressional Reports for May 2019 – Business & Finance**  
*Aston Dunkley*  
In series: *Business, Technology and Finance*  
Hardcover: 978-1-53616-331-5. $195.00.  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service on International Relations during the month of May.
Key Government Reports on Business and Finance for May 2019
Esma Hogenes

In series: Business, Technology and Finance

This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of May, grouped according to the topic: Business and Finance.

Knowledge Management: Progress, Trends and Challenges
Travis Graham

In series: Management Science - Theory and Applications
Softcover: 978-1-53616-018-5. $82.00.
e-book: 978-1-53616-019-2. $82.00.

Knowledge Management: Progress, Trends and Challenges first aims to contribute to the current literature on knowledge sharing through understanding how open workspace layouts (from a social and spatial proximity perspective) promote faster decision making, operational efficiency and innovativeness, and how the alignment of employee and firm expectations shape this process. Knowledge management has strategic importance for any manufacturing enterprise.

Systematically gathered, analyzed, and interpreted professional experiences can prevent technical problems, unnecessary costs, and unnecessary engineering changes. As such, the model for recording of knowledge and its integration into the engineering change and adaptive design process is the main contribution of the second chapter. The landscape of pricing innovations is created by compiling and sorting the varieties of novel pricing practices. This piecemeal approach to capturing the entire scope of pricing innovations is not capable of supporting attempts to discover interdependencies between several innovations, let alone to design future innovations. To overcome these deficiencies, a knowledge-based approach is proposed in the closing chapter, which covers building blocks of relevant know-what, know-why, and know-how.

Negotiation and Decision Making in Mergers and Acquisitions. Intercultural Due Diligence
Iulian Warter, PhD (Center for Socio-Economic Studies and Multiculturalism, Iasi, Romania)

In series: Financial Institutions and Services

This book concentrates on some leading questions in M&A research in last two decades and tries to find explanations concerning cultural issues. It focuses on pre-merger/acquisition issues mainly on negotiation, decision and intercultural due diligence. The core of this book is the pre-M&A stage in order to throw light on the cultural issues related to negotiation, decision making, and due diligence. Its primary purpose is a finer view of the impact of national, organizational and professional cultures in mergers and acquisitions. The general questions encountered in this book are related to nexus between culture and integration of the two companies, management’s involvement in the cultural due diligence process, national, organizational and professional cultures’ link to negotiation and decision-making process, negotiators’ behavioral patterns, intentions, perceptions and attitudes identified and associated with M&A’s success, managers’ cultural specificity and their management practices. The aim of this book is to provide a deeper understanding of the cultural differences in negotiation and decision-making. This might help organizations provide better opportunities for cross border M&A across a wide cultural spectrum. With the increase of global mobility, cultural due diligence becomes more and more important. Multi-national corporations might garner a competitive advantage when they understand the importance of cultural due diligence. M&A professionals may benefit from a deeper understanding of cultural values that affect the perceptions of individuals during negotiation and decision-making by profession across cultures. Multinational companies that do not take into consideration or minimize the importance and the right content of cultural due diligence expose themselves to a higher risk of failure. The expectation of the author of this book is that the conclusions would help alert M&A scholars and practitioners of the need to thoroughly understand the cultural issues influencing the pre-M&A processes.
Orchestras: A Model for Social and Organizational Development
Ralph J. Bathurst (Massey University, School of Management, North Shore Mail Centre, Auckland, New Zealand), David F. Gilling (New Zealand Symphony Orchestra, Sub Principal Second Violin) and Sasha J. Rasmussen (University of Oxford, Oxford, England)
In series: Business Issues, Competition and Entrepreneurship
2019.
Hardcover: 978-1-53616-345-2. $160.00.
The symphony orchestra as an organizational form models how 21st century societies and business enterprises could operate. The onset of the digital age, sometimes called the fourth industrial revolution, has brought with it unprecedented challenges to organizing and leading. With so few examples available to show us the way, we have been all too ready to embrace digitization in our communication strategies, structural arrangements and educational processes without thinking through and resolving the deleterious effects that these technologies have on human beings, both at work and play. The rise of social media sites, which keep people connected across geographical and temporal boundaries, have paradoxically created isolated and lonely human beings. In some cases, lone actors have taken out their personal angst on others through the murderous use of military-style weapons, live-streaming their terror to their globalized audiences. In the face of this seemingly unstoppable tide of growing disparate communities and workplaces, the symphony orchestra asks to pause and explore embodied ways of operating. This book demonstrates that people can form vibrant communities by learning how an orchestra performs. We discuss the engine room of the orchestra: the string musicians’ keen sense of timing and being together with each other and the rest of the ensemble. Equally, the woodwind players help us understand tuning and how to work with variable intervals in order to achieve consistent intonation across the cohort. Orchestral musicians listen intently to each other, and the conductor plays an important role in achieving cohesion. This relationship between the conductor and the musicians demonstrates ways of leading that attend to the dynamic environment, which characterizes orchestral music-making. The symphony orchestra presents a model for social and organizational development that goes beyond standardization and its resulting approximation, which in music terms is called ‘equal temperament’. Organizations can achieve the much-promised excellence and efficiency when all staff understand the non-standard variations in music intervals that characterize orchestral performance. The orchestra models the relational elements that underpin organizing: ways of reconfiguring society beyond the political and social divides that trouble communities across the globe.

Private Equity Globalisation: Ethical Business Challenges
Maria Alejandra Madi (UNICAMP, Brazil; The Green Economics Institute, UK)
In series: Business Issues, Competition and Entrepreneurship
2019. 188 pp.
Softcover: 978-1-53615-043-8. $95.00.
This book aims to fill a gap in existing literature in order to contribute to the understanding of the main features and outcomes of the private equity business model that has already been spread around the world. Private equity funds have been drivers of the financialisation of the global economy. Lying at the juncture of the real economy and the shadow banking system, private equity funds draw upon capital and debt to acquire stakes in companies that are intended to be sold for profit after a number of years. Indeed, these institutional investors have a key role in the diversification of global investments. Although US private equity firms are still dominant, the global private equity industry has been mainly moving toward Europe and the Asia-Pacific region. The process of financialisation has contributed to unprecedented social, political, and environmental challenges. In this setting, the complexity of social and economic policy problems of the 21st century requires the recognition of the role of private equity globalization in the selection of investments and in the creation of new business structures. The shifts in corporate ownership, through waves of mergers and acquisitions, have created new business structures where companies are considered bundles of assets and liabilities to be traded in order to get short-term returns. Indeed, new investment and portfolio management practices have been overwhelmed by the financialisation of wealth and “short-termism” in American and European business. While private equity investors aim to maximize their short-term returns, private equity funds turn to be major transnational employers. The outcomes of the global financial crisis of 2007-2008 made clear the need to redress and redesign business models and re-balance corporate power in order to broaden the dialogue on social responsibility. Maria Alejandra Madi’s book aims to foster a deeper understanding of the ethical challenges related to the private equity financial engineering model. In short, the book aims to prepare the reader for participating in a fruitful debate. The main target is the transformation of the global economy to a more just and sustainable one. This book is recommended for a broad interdisciplinary audience. Not only students in economics, management and international business, but also policy makers, regulators, managers and investors. Reading this book will benefit all those who seek to better understand the complex stakes in the evolution of the capitalist system, in the tensions between short-term profit targets, regulatory policies, and participatory openings in governance and social inclusion.
Trust Throughput Modeling Pathways
Waymond Rodgers

In series: Ethical Issues in the 21st Century
To most individuals, “trust” can be viewed as a knowledge asset that may add, or rest, value to the company. The role of knowledge in achieving a judicious advantage is becoming an increasingly important issue with individuals and organizations. Trust supports an ethical valuation of people and organizations that fundamentally affects relationships with others. When trust is present, communication and problem solving are relatively easy. When distrust occurs, productivity
and relational value can suffer significantly. Trust lowers transaction costs in more uncertain environments, thus providing individuals and organizations with a source of unique advantage. Moreover, distrust emerges when the suspicion arises that the disruption of expectations in one exchange is likely to generalize through all other exchanges. As such, the Throughput Modeling approach indicates how six different trust behaviors can be guided, how trust decision making can be improved and made defensible, and how special problems facing individuals, relational systems, and institutions can be dealt with via decision-making pathways leading to action.

Unemployment Insurance: Issues, Challenges and Perspectives
Arlette Bolk
In series: Economic Issues, Problems and Perspectives
Softcover: 978-1-53614-937-1. $95.00.
e-book: 978-1-53614-938-8. $95.00.
Unemployment insurance (UI) is a federal-state system and mandatory AJC partner. UI benefits are available to workers who have involuntarily lost their jobs and have demonstrated a required level of labor force attachment. UI provides weekly cash payments to replace a portion of eligible workers’ earnings, up to a statewide maximum. Eligibility and benefit levels vary by state, though most states offer up to 26 weeks of state-financed UI benefits through each state’s Unemployment Compensation (UC) program. Certain economic conditions may extend the duration of UI benefits through the permanent Extended Benefit (EB) program.

Georgia: History, Culture and Ethnography
Anzor Erkomaishvili
In series: Countries and Cultures of the World
2019.
This two-volume book entitled Georgia: History, Culture and Ethnography is a richly illustrated, genuine gift for the lovers of European culture and history. This book consists of more than twenty chapters in which Georgia’s musical folklore is described in detail according to its different ethnographic corners. It is accompanied by audio recordings of more than 1,600 Georgian folk songs and more than 100 church hymns. It also contains unique videos of Georgian folk dances. In the first volume, the reader will find articles about pre-Christian culture, as well as church architecture, fresco paintings, icon painting, and sacred hymns belonging to the period after the adoption of Christianity by Georgia (IV century AD). Readers will discover how unique and distinctive this culture is, and how it was developed by such a small country in the South Caucasus, the territory of which is recognized as the homeland of winemaking and the oldest dwelling of man in Europe. In the second volume, for readers interested in musical folklore and folk art, they will learn about Georgian folk architecture, pottery, stone masonry, winegrowing-viticulture, costumes and other elements of Georgian folk traditions.

Bilingual Education
Foreign Language Teaching and Learning: New Research
Terrell Welch
In series: Languages and Linguistics
Hardcover: 978-1-53615-530-3. $195.00.
e-book: 978-1-53615-531-0. $195.00.
Foreign Language Teaching and Learning: New Research begins by examining whether, and to what extent, the three types of linguistico-cultural expressions (proverbs, idioms and sayings) of Nepali translated into English would be intelligible to native English speakers and non-native English speakers outside of Nepal. The second chapter reveals the challenges in successful foreign language acquisition for primary school age learners. Particular attention is paid to the investigation of cognitive styles such as impulsivity, reflectivity, rigidity, and flexibility in the learning process. The third chapter focuses on the theoretical substantiation and experimental verification of student-centered learning technology in the educational process. Additionally, the authors investigate data collected in Portuguese L2 classrooms in a multicultural university in Macau, China. The combination of the students’ first language (Cantonese or Mandarin), the target language (Portuguese)
and the official language of the university (English) was found to provide different spaces for participants to formulate contexts and define rules regarding the exclusive use of the target language in class. The impact of an integrated cooperative learning approach on soft skills related to English as a foreign language learning is assessed, in addition to existing research on the characteristics of written texts of level two test-takers by adopting a linguistic and discourse analytic approach. The authors go on to present data gathered through a questionnaire adapted from McMillan (2001) and follow-up interviews conducted to gain a deeper insight into the instructors’ classroom practices. The findings of the study revealed important implications related to the congruence and incongruence between the requirements of Turkish as second language curriculum in Turkey. The closing chapter focuses on teaching methodologies and classroom practices that could provide learning opportunities to develop and maintain academic skills and self-regulated language learning strategies, specifically, through implementing a project-based learning approach.

Teaching English: Perspectives, Methods, and Challenges
Astrīda Skrinda (Centre of Sustainable Education, Institute of Humanities and Social Sciences, Daugavpils University, Latvia)
In series: Languages and Linguistics
2019.
Softcover: 978-1-53616-168-7, $95.00.
Original contributions from recognized and established scholars and practitioners offer a variety of perspectives on teaching English as a second or foreign language and an expanded focus on teaching in international contexts. Definitely, we must build on our past and present knowledge of what works to refine and improve existing language teaching practices and, it is hoped, develop other practices that will be even better and more encompassing. Thus, Chapter 1 reports the launch of a newly designed Problem-Based Learning program in which metacognitive strategy instruction was integrated into an English listening curriculum. It combines the Problem-Based Learning approach from education and the Metacognitive Approach from second language listening research. This is an exciting time to be teaching English as a second or foreign language. In many countries, children are starting to learn English at an earlier age. Chapter 2 provides a meta-analysis of the situation currently observed in many English as a foreign language classes given to Polish and Slovak preschool learners, among others. It covers not only an analysis of a number of currently observed approaches, but also presents research-based propositions. Also, it suggests a handful of problem-grounded outcomes. We cannot be satisfied with the in-progress state of affairs but must seek out new ways to provide learners with the most effective and efficient language learning experiences possible, taking into account the learners’ goals, interests, and learning contexts. Chapter 3 leaves us with many questions unanswered, it sheds the light on the teaching of cultural elements in language teaching, particularly in a European context. Finally, Chapter 4 offers a unique perspective on language instruction, particularly for audiences unfamiliar with Buddhist philosophy. Basically, it describes a teaching approach based on Buddhist philosophy, which would probably be very effective for someone familiar and/or interested in that particular school of thought. Alternatively, it would open readers’ mind to a completely different approach to language instruction, which may or may not work outside of its current context, but at least it has a very clear philosophical foundation and very clear set of procedures that are worth examining further. The intended audience are all those who are interested in teaching English as second or foreign language, including researchers, methodologists, curriculum and materials designers, teachers, and undergraduate and graduate students.

Classroom Management

Improving Teaching and Learning through Self-Regulation
Betty McDonald (University of Trinidad and Tobago, Arima, Trinidad & Tobago)
In series: Education in a Competitive and Globalizing World
2019.
Softcover: 978-1-53616-304-9, $95.00.
e-book: 978-1-53616-305-6, $95.00.
Using contemporary empirical research data, this book takes the stance that purposeful self-regulation actively contributes to promoting deeper learning approaches and generally improves teaching and learning. The underlying aim is to help students become strategic, motivated, and independent learners, capable of controlling themselves by themselves. Such self-control may range over a host of variables (behavioural, psychological, emotional, etc.). This book comes at a time when connectivity has exponentially improved worldwide so that more and more individuals have real time information at their fingertips. The fundamental shift in information accessibility from tedious searching through books and manuscripts to on-demand click of a mouse has had phenomenal impacts of the way we do business. Whereas previously, self-regulation may not have been a priority for many persons, increasingly it has now assumed preeminence with the proliferation of laptop computers, tablets, smart phones and numerous other handheld devices that allow easy access to the Internet. In fact, researchers continue to develop software for helping students self-regulate as well as getting the most out of their studies. Needless to say, self-regulated learning (SRL) is mandatory not only for employability but also for lifelong learning since it enables learners to construct knowledge (constructivism) by identifying their own learning goals; self-managing their learning processes; and self-evaluating their performance against goals. Additionally, SRL is very
important when often times it is observed that several individuals who have noticeably lower cognitive abilities are able to better self-regulate and consequently achieve more than they should be able to according to their cognitive ranking. Improving teaching and learning through self-regulation therefore has far reaching implications for the kind of individuals we send out to society and the nature of the contributions they make. Quotations from well known persons in the public domain serve to anchor the reader in preparation for the contents of the corresponding section. Such quotations have been found to serve as an effective form of motivation and accordingly may be successfully echoed to students when appropriate. The shareware graphics interspaced in the text not only break the possible monotony usually experienced by many readers, especially in today’s online age, but serve to engage and stimulate thought and, in many instances, bring comic relief. These exhibits help to capture the attention of readers and help them to focus on the contents of the various sections at hand. Reinforcing ideas is another powerful function served by the apparent preponderance of exhibits. Hence, what may well be easily misconstrued as too many exhibits, would be much better interpreted as a unique and unusual presentation, with a variation of format, that is meant to have the reader truly appreciate the common saying, ‘a picture is worth a thousand words’!

**Teacher Development: Perspectives, Opportunities and Challenges**
*Thea J. Moller*

In series: *Education in a Competitive and Globalizing World*
Softcover: 978-1-53615-258-6. $95.00.

Chapter one will review teacher development in Sudanese state primary schools, as well as the poor resources available to teachers. It discusses the need for teacher development and training to help with the transition to a new curriculum written for these schools, and the challenges faced by the teachers, as the new curriculum is quite different from the previous one taught in state schools. This chapter describes a case study using a qualitative ethnographic research methodology that examines the significant role of developing resilience and grit within a pre-service teacher education program. Chapter three discusses the broad interface between the concepts of agency, professional identity and creative insubordination. It presents discussions about the agency and professional identity of teachers in narrating their actions of creative insubordination. It aims to map and analyze written narratives, identifying insubordinate actions revealed by teachers teaching mathematics and discuss how these attitudes, incorporated into teaching practice, contributed to the effectiveness of teaching statistics in their mathematics classes in Elementary School. The following chapter will employ a critical analysis of an instrumental theory-building pre-service teacher case-study as the foundation of a theoretical-based, cyclical, self-reflective teacher cultural competence professional development model. In this chapter, attention will be paid to the modern environment, which is a complex phenomenon revealing many interesting trends. The spate of events, civilization’s progress, the cult of performing different tasks, and professional duties all disrupt the rhythm of work and rest. These disproportions take their toll on everyday existence in the teacher’s profession. The final chapter uses evidence from reports prepared for governments’ quality agencies, plus papers and seminars given by the author, to document the changing face of teacher education in Lithuanian and Latvia, from 2003 to date.

**Teacher Training: Perspectives, Implementation and Challenges**
*Paula E. McDermott*

In series: *Education in a Competitive and Globalizing World*
Hardcover: 978-1-53615-633-1. $230.00.

Teacher Training: Perspectives, Implementation and Challenges opens with a study seeking to show how students and practicing teachers develop core professional competencies in the early childhood education department of the Levinsky College of Education in Israel. These competencies, such as relationships with children and adults, mediated learning experiences, and classroom management, are embedded in a small number of core practices that have been systematically and intensively incorporated into early childhood education studies, and sometimes integrated by the graduates into their daily practice. The authors also introduce a study examining the transformation in perceptions of learning-teaching processes of third-year student teachers in in the early childhood education program in Levinsky College of Education while implementing emergent curriculum. A multiple case studies (Yin, 2014) approach is used to reveal learning processes and challenges. Following this the authors show how student teachers at Levinsky College of Education implement an emergent curriculum approach (Jones, 2012; Rinaldi, 2001; Yu-le, 2004) and create bridges to diverse children’s homes, focusing on the rationale of the program, its implementation and children’s perspectives. To train student teachers in the early childhood education program, a simulation center was created in which videotaped simulations are used as a critical learning tool. Subsequent analysis of the students’ documented thoughts and feelings about the simulations revealed key insights regarding communication with parents. This compilation goes on to examine how early childhood education interns interpreted communication with parents and what difficulties and challenges preoccupied them, because the identification of these central difficulties and challenges may contribute significantly to the knowledge
of family-school relations in a diverse and changing society. A subsequent study provides a careful investigation into the effects of a course on the parent-teacher relationship on student teachers’ and interns’ perceptions. This study was derived from the goal of preparing student teachers to cope effectively with relationships with parents. The authors examined teachers’ use of repeated narrative writing based on Pennebaker’s (Pennebaker & Evans, 2014) expressive writing method to cope with emotionally loaded incidents related to behavior problems in the preschool classroom. An analysis of sixty narratives written by two Israeli teachers revealed that repeated narrative writing helped them overcome helplessness, regulate negative feelings towards people and situations involved in the incidents, and develop self-efficacy and self-determination, as well as improve their classroom management competencies. The final chapter demonstrates an approach to elicit teachers’ ideas about teaching and their reflections on teaching practices. The approach of constructing a practical argument allows for analysis of teachers’ thinking in combination with their actions in the classroom.

Teaching Practices: Implementation, Challenges and Outcomes
Bernd Vogler
In series: Education in a Competitive and Globalizing World
Softcover: 978-1-53615-900-4, $82.00.
e-book: 978-1-53615-901-1. $82.00.
The opening chapter of Teaching Practices: Implementation, Challenges and Outcomes specifically addresses the challenges we have faced during more than ten years of research into different topics regarding teaching practices, from subjects such as the relationship between the planning of practices and their application in specific classroom contexts to others linked to task management in the direct teaching of content. Next, this compilation is interested in providing some insight for teachers to be able to use classroom artifacts and to convert them into real tools useful in students’ learning. A study that aims to raise educators’ awareness and inform them about the scope and implementation of instruction management is presented. It focuses on primary education, which is a critical step for learners to be equipped with the necessary skills to join knowledge-based economies. The purpose of the penultimate chapter is to analyze the relevance of knowledge in the search for improvement in teaching practices, taking as starting point the lack of a single path of teacher improvement. A qualitative study presented in the final chapter explores challenges facing the implementation of teaching in an open, distance and e-learning institution, and identifies ways in which these challenges can be mediated. The challenges are related to school placement, supervision, mentoring, administration, resources, assessment and communication.

Educational Psychology

"Imagination Dead Imagine" because “You Can Trap Birds With Birdlime, But You Cannot Capture Their Song”
Yota P. Xanthacou (University of the Aegean, Rhodes, Greece), Maria A. Kaila (Professor in Educational Psychology, University of the Aegean, Rhodes, Greece) and Vasilis F. Papavasileiou (Assistant Professor in Environmental Education, Education for Sustainable Development, University of the Aegean, Rhodes, Greece)
In series: Education in a Competitive and Globalizing World
Softcover: 978-1-53614-324-9, $95.00.
e-book: 978-1-53614-637-0. $95.00.
This book gives a new insight into the concept of creativity and innovation as it offers a new perspective on these concepts. It connects creativity and innovation with education. It connects creativity with sustainability and the education for sustainable development. It describes the complex and multifaceted concept of creativity and the universe of innovation connected with education, sustainability, design, humor, play, toys, tool toys and artifacts. This book emphasizes that today’s educational model generally supports the development of one kind of analytical thinking, and that creativity in schools, in organizations, and in business has been buried by rules and regulations. Furthermore, it points out that creativity skills can be learned not by sitting passively in lectures, but by learning and applying the creative thinking process by experimenting, exploring, questioning assumptions, using imagination and synthesizing information. It is important for education systems to become more flexible, more adaptive, and more innovative. Creativity is not fostered by extrinsic incentives, but by intrinsic interest. This book also dissects gently the multiple aspects of the creative process and its stages, from preparation to incubation, and from illumination to verification. It inspires students, teachers, managers, and policymakers, and promotes and ignites in them the flame of innovation and creativity.
Student Motivation: Perspectives, Improvement Strategies and Challenges
Tatius Oliver
In series: Psychology of Emotions, Motivations and Actions
Softcover: 978-1-53615-347-7. $82.00.
e-book: 978-1-53615-348-4. $82.00.
Student Motivation: Perspectives, Improvement Strategies and Challenges opens with a study wherein the authors cross-validate the modified four-scale SALES (when used for the first time with gifted students) in terms of factorial validity and internal consistency reliability. The correlation between the six learning environment scales and each SALES scale was statistically significant, with task orientation being the strongest independent predictor. Theoretical approaches to defining the content of motivation of student learning activities are discussed, and the essence of the concept and theoretical approaches to its study in psychological science is been specified. The authors go on to investigate the key motivating factors affecting the learning of accounting by undergraduates. A research model is developed to link various motivating factors, learning efficacy, as well as academic performance. Next, this compilation examines the effectiveness of applying a variety of teaching strategies in a general education course that involves mathematics in the United Arab Emirates, including the impact on female adults, contribution to life at home and work, and changes to perceptions of mathematics. Lastly, this compilation studies the relationship between the students’ learning approaches in undergraduate accounting programs and the achievements they have made in their studies. A questionnaire covering learning motives and strategies was adopted from Biggs (1987) to investigate the learning approaches of accounting students.

General Education

Progress in Education. Volume 57
Roberta V. Nata
In series: Progress in Education
Hardcover: 978-1-53614-799-5. $250.00.
Progress in Education. Volume 57 opens with a study wherein the aim is to investigate long-term effects on motor skills and scholastic performance of increased physical education and adapted motor skills training according to the motor skills as ground for learning model. Additionally, the authors set out to describe the implementation and societal gains of the Swedish Bunkeflo Project–A Healthy Way of Living. The authors offer a theoretical and practical approach regarding gamification in physical education. For this, the different types of gamification are analyzed, particularly focusing on the origin of gamification in the field of business. The original method of distance learning by exam is discussed, principally the way students can revise their exam papers many times in order to increase their grades, suggesting that didactic encouragement included in the feedback has a motivating function. The following study presents an exercise designed to support the understanding of green roofs as urban ecosystems through a conceptual model, acting as a facilitator for communication across different disciplines. This study shows how conceptual modelling may promote a better-integrated solution for socio-ecological problems. Also presented in this compilation are the results of research concerning tutoring technology for physical education in special needs children. Technologies are employed for correcting motion and psycho-functional and physical capabilities, as well as for the diagnosis and monitoring of psycho-functional conditions. In the 21st century, technological innovations have become increasingly important as we face the benefits and challenges of globalization and a knowledge-based economy. To succeed in this new information-based society, the authors propose that all students need to develop their capabilities in science, technology, engineering, and mathematics (STEM) to levels beyond what was considered acceptable in the past. In closing, the authors present arguments supporting how academic development enhances teaching and learning in rural universities. Scholars argue that staff development helps enhance the learners’ performance, in addition to improving the university teaching and learning environment.

Progress in Education. Volume 58
Roberta V. Nata
In series: Progress in Education
Hardcover: 978-1-53614-950-0. $250.00.
In this compilation, the authors present the results of a research project that investigates how understanding the relationship between culture, employment and education can help Tanzania’s young people to secure jobs, survive in the creative workforce and have a prosperous future. The authors define “situation specificity”, showing that the previous discussions have been overly simplistic. It is suggested that situation specificity is important in at least three ways: practice and theory-practice transfer, methodological issues including generalization and biases, and dispositions as goals of educational intervention. Next, it is proposed that an ethnomathematics curriculum helps students to demonstrate effective mathematical processes and identities, solve problems, communicate ideas, choose appropriate representations through the development of mathematical practices, and recognize its connections with STEM disciplines. The authors’ work, in
relation to STEM, is based on the Trivium Curriculum for Mathematics and Ethnomodelling, which provides communicative, analytical, and technological tools as well as the development of emic, etic, and dialogic approaches that are necessary for the development of the school curricula. The penultimate chapter provides an overview of the role of higher education institutions in graduates’ entrepreneurship knowledge acquisition in Tanzania. Unemployment problems faced by recent graduates in the country are highlighted and linked to the diffusion of entrepreneurship into non-business academic programs. In the closing chapter, the authors argue the need for a paradigm shift from the current domain focused curriculum (or semi-functional curriculum) to one that is really functional for acquiring of relevant knowledge and skills. Education should take place within authentic contextual learning environments, where complexity may be unpacked gradually through continuous exposure and habituation of expected responses.

**Progress in Education. Volume 59**  
*Roberta V. Nata*  
In series: *Progress in Education*  
Hardcover: 978-1-53615-367-5, $250.00.  
The purpose of the opening chapter is to highlight the significance of ensuring effective classroom management and learner discipline practices by teachers in schools. Lack of classroom management and learner discipline practices presents a global challenge. The authors in the following chapter reflect on their experiences of using action learning in academic development initiatives, and draw on various others’ accounts in order to explore the potential and the challenges of this particular approach to continuing professional learning in the higher education context. The authors go on to discuss how poverty experienced in childhood is not without consequences for both the current and future educational, professional and social functioning of the young generation, generating an extremely difficult transition of a young person into adult life. Following this, an attempt is made to provide useful insights and contribute to sketching a student’s profile within multicultural contexts, based on the teachers’ views. It is aimed at identifying teachers’ views on intercultural attitudes and intercultural communicative and cooperative skills that a student has to develop, in order to cooperate and interact effectively in a multilingual context. In the next chapter, the authors present an analysis of the transformation process which the system of education in Slovakia has undergone during the period of the last three decades, and present the results of research aimed at a school leader’s competence profile. One study analyzes official documents and interviews of authorities and former teachers in the Italian Immigration Region in Southern Brazil, focusing on the period of the Nationalization Campaign of the Vargas Government (1937-1945), when teaching in Portuguese became mandatory. The main objectives of the penultimate chapter are twofold: (1) to discuss the design, implementation, and outcomes of an NSF-funded Research Experience for Undergraduates (xREU) summer program in a four-year private university located in the northeast of US; and (2) to provide practical recommendations for educators and researchers for designing experiential learning opportunities in STEM areas. The closing chapter evaluates recent research that has explored the nature of the theoretical concept of optimal functioning, which emphasizes the importance of personal resolute, inner strength, and the maximization of a person’s development, whether it is mental, cognitive, social, or physical. In the context of academia, the study of optimal functioning places emphasis on a student’s effort expenditure, positive outlook, and determination to strive for educational success.

**Progress in Education. Volume 60**  
*Roberta V. Nata*  
In series: *Progress in Education*  
Hardcover: 978-1-53615-974-5, $250.00.  
The research examined in the opening chapter of Progress in Education. Volume 60 aims at uncovering and examining pre-service teachers’ concepts of teaching activity relating to student coeducation and educational practice in school classrooms. The authors describe the problems faced by schools system-wide use of evidence-based teaching approaches with evidence-based teaching practice, followed by a technology-based theory to practice design solution for building the capacity of practicing teachers with teacher led and cooperative instruction. The effect of a two-way immersion school project on the second language proficiency and mathematics competences of 10-12-year-old children is investigated with an intent to open new avenues for teachers, researchers and policy makers, by encouraging new immersion projects based on local conditions. Next, this compilation focuses on the particularity of communication as a key factor in creating, developing and improving interpersonal relationships between parents and their pre-school age children. Some thoughts, comments and suggestions on this topic based on the literature and on the author’s educational / academic experience, consists the content of this chapter in a brief way for a vast field of study. Currently, mental wellbeing among healthcare students and practicing professionals is a major worldwide concern. Studies have described alarmingly high levels of anxiety and stress among students of dentistry, nursing and medicine. As such, the authors discuss the two main stressors for mature students while in higher education. Drawing on empirical research using Interpretative Phenomenological Analysis as the predominant method of enquiry, the authors focus their attention on two important aspects of the student
transitional journey: student experiences as they move from secondary school to a branch campus medical school in the Middle East, as well as the medical graduates’ challenges as they move from a Middle Eastern-based university delivering a Western curriculum to begin practice as junior doctors. The penultimate chapter demonstrates the importance of school, rehabilitation and mental health counselor education programs in the United States and Georgia. With a significant number of the United States population having substance abuse problems, all counselors will encounter clients struggling with substance abuse. Therefore, counselor education programs should require knowledge or skill development in this area. The final chapter looks at the root causes of problems with the current education system in Western societies, using Australia as an example, and how the systemic core of the issues arising are stem from the system being stuck in an historic paradigm.

**Progress in Education. Volume 61**

*Roberta V. Nata*

In series: *Progress in Education* 2019.

Hardcover: 978-1-53616-300-1. $250.00.

The study presented in the opening chapter of Progress in Education. Volume 61 examines Common Core State Standards teacher preparation through professional development opportunities for elementary school teachers in rural areas of the South Eastern Region of the United States. The study posits the question, “Were teachers in the rural South properly and equitably prepared to teach both the English Language Arts and Math Common Core Standards?” The following chapter focuses on the use of the computational thinking process for problem solving and, in particular, for case-based reasoning and mathematical modelling. The former is a method of solving problems based on the solutions of previously solved analogous problems, while the latter deals with the mathematical formulation and solution of problems connected to real word, science and technology applications. Next, some learning activity patterns are identified from a thorough qualitative study of students’ behaviors recorded in a major Massive Open Online Courses platform. Then, two recently developed learning-based models for modeling students’ learning behaviors which are motivated by such observations are described. The authors go on to study the inclusive approach to the conducting-choral training of future teachers of musical art. It considers the essence of the concept of “inclusiveness”. The inclusive approach to conducting-choral training involves both the use of the traditional teaching principles and the specific principles we have developed. In academic fields, both teachers and students are likely to suffer technology anxiety. As such, one chapter focuses on the main factors behind this type of anxiety according to the currently available literature on computer anxiety: age, gender and experience. The process of choosing a university degree involves uncertainties for the students referred to their personal abilities, interests, and social and professional expectations. The main objective of the penultimate chapter is determining whether their expectations of a particular university degree differ significantly according to gender. Flipped classrooms have been considered to be a form of innovative teaching and learning in university education for a few years. The purpose of the final study is to explore how flipped classrooms with learning communities affected university students’ self-regulated learning and teachers’ professional development.

**Higher Education**

*A Virtual Higher Education Campus in a Global World: The Role of the Academic Campus in an Era of Technological Progress*

*Nitza Davidovitch* (Ariel University Center of Samaria, Ariel, Israel), *Yuri Ribakov, PhD* (Department of Civil Engineering, Ariel University, Ariel, Israel), *Anna Slobodianiuk* (Foreign Languages Department, KD Ushynsky South-Ukrainian National Pedagogical University, Odesa, Ukraine), *Neeru Snehi* (Department of Higher and Professional Education, National Institute of Educational Planning and Administration, New Delhi, India), *Sangeeta Angom* (Department of Higher and Professional Education, National Institute of Educational Planning and Administration, New Delhi, India) and *Alexandra Gerkerova* (Ushynsky University, Odesa, Ukraine)


Hardcover: 978-1-53615-784-0. $230.00.

This book focuses on the challenges of academic teaching in an era of technological advances. The challenges of pedagogy and technology are an important topic in the debates of academic scholars on the instructor’s role in an era of technological progress. Have lecturers become obsolete? Will the classroom become a studio setting in which lectures will be broadcast?
What is the role of collaboration in creating a multi-campus virtual university where the best lecturers teach and share their knowledge? What are the implications of the new options created through the mediation of lecturers’ teaching materials? What are the implications for teaching practice and the learning experience, and what are the social, ethical, moral, and financial implications and the implications for infrastructure and policy-making? The contributing authors, researchers and educators from diverse disciplines and research institutions offer a fresh perspective on the changing face of teaching in higher education and its responses to contemporary challenges.

Exploring the Opportunities and Challenges of Medical Students
Elias A. Jespersen
In series: Education in a Competitive and Globalizing World

Exploring the Opportunities and Challenges of Medical Students begins with a systematic review of quality improvement curricula for medical students to identify current training techniques, learning outcomes, opportunities, and challenges to the implementation of quality improvement curricula. Following this, the authors describe the curricula and analyze results from two short term programs: a summer research and scholarly program between the first and second year of medical school, and research rotation electives offered to third- and fourth-year students. The authors also discuss the rationale for developing physician-leaders, review the need for incorporating leadership development programs in medical curriculum, and discuss the best practices of formulating such programs and their expected challenges. This compilation goes on to compare first and third year medical students’ commitments in relation to idealism, as several works have demonstrated that idealism decreases as the students’ progress in their career, partially due to the hidden curriculum. Using questionnaires as data collection instruments, one included paper reports on the qualitative analysis of responses and subsequent discussion in English, including implications and recommendations for Saudi Arabian medical education authorities to better achieve the objectives of medical education through the medium of language instruction. Lastly, this collection describes the notion of physicians’ social skills (with emphasis on shaping social skills in medical students during their studies) in Ukraine, a country in which health services have undergone difficult changes after 1991.

Global Perspectives on University Students
Dulce Esteves, PhD (Department of Sports Science, Universidade da Beira Interior, Covilhã, Portugal & Research Center in Sports Sciences, Health Sciences and Human Development (CIDESD), Portugal), Damian Scarf, PhD (Department of Psychology, University of Otago, Dunedin, New Zealand), Paulo Pinheiro, PhD (Department of Management and Economics, Universidade da Beira Interior, Portugal & Research Unit in Business Sciences (NECE), Portugal), Hitaua Arahanga-Doyle (Department of Psychology, University of Otago, New Zealand) and John A. Hunter, PhD (Department of Psychology, University of Otago, New Zealand)
In series: Education in a Competitive and Globalizing World
In series: University Teaching and Faculty Development

This book provides a comprehensive overview of different dimensions that influence university students, such as social factors (including the indigenous perspectives, social identity and mental health, depressive symptoms in university, the helicopter parenting, the change in family relations and adoptions of healthy/unhealthy behaviors while in college); individual aspects that influence this population (like personal autonomy or entrepreneurial intent) and major problems faced by students (like alcohol consumption or the challenge of writing a thesis). This book is a must read for college administrators, teachers and researchers as tips, best practices, and lessons learned are applicable to any academic department seeking to improve learning environment of their students. The contributors to this book are associated with colleges and universities from nine different countries, from four continents. The authors have a broad range of educational and professional experience and offer unique insights into the wide variety of methods utilized to design and provide new understandings regarding college students.
Higher Education Institutions: Perspectives, Opportunities and Challenges

Joe Maxwell

In series: Education in a Competitive and Globalizing World

In series: University Teaching and Faculty Development


In the opening chapter of Higher Education Institutions: Perspectives, Opportunities and Challenges, the authors investigate and present the concept of internal quality assurance system implementation maturity, aiming to analyze the existing theoretical underpinnings on how maturity can be understood and approached in terms of an internal quality assurance system. Some pathways available to the higher education institutions towards the assessment of needs and the improvement of course planning, curriculum design and student guidance systems are discussed. An empirical study is presented seeking to validate the structure of total quality management construct with an objective of identifying the current total quality management practices employed as perceived by the staff of Islamic University in Uganda. The penultimate chapter focuses on a deeper understanding of the efficiency measurement and its determinants of the higher education institutions of Spain. The aim of the closing chapter is to explore the influence of a university environment on entrepreneurial activities of students and alumni in the post-Soviet context.

Higher Education: Background, Tax Benefits and College Credits

Isaac Mario

In series: Education in a Competitive and Globalizing World

Hardcover: 978-1-53616-028-4. $195.00.

Many people in this country grow up dreaming about the college experience, leaving home and starting off in their own world, hoping to obtain the education and skills they need to be successful in life. With more than 7,000 postsecondary institutions in the U.S. to choose from, selecting the best schools and finding the best way to pay for it can be a daunting task. The Higher Education Act of 1965 authorizes numerous federal aid programs that provide support to both individuals pursuing a postsecondary education and institutions of higher education (IHEs). Chapter 1 provides a brief overview of the major provisions of the HEA. The federal government provides financial assistance to individuals for higher education expenses in two major ways: tax benefits and traditional student aid. Chapter 2 contains a brief overview of the higher education tax benefits that are currently available to students and their families. Chapter 3 provides insights into how prospective students make important decisions that affect their long-term academic and professional futures. An estimated 35 percent of college students transferred to a new school at least once from 2004 to 2009. Chapter 4 examines transfer rates and challenges students face in transferring credits, the possible financial implications of transfer, and the extent to which students are provided with transfer information to help them plan their college path.

Higher Education: Financial Concerns and Minority-Serving Institutions

Lilian Wieck

In series: Education in a Competitive and Globalizing World

Hardcover: 978-1-53616-026-0. $230.00.

Chapter 1 examines Education’s role in: (1) recognizing accrediting agencies, (2) overseeing the financial condition of schools, and (3) overseeing schools’ student loan default rates. Chapter 2 discusses (1) how Education oversees the financial condition of schools; (2) the extent to which Education’s oversight has been effective at identifying schools at risk of closure; and (3) the extent to which Education informs schools and the public about its financial oversight. For many service members, getting an education is a critical component of transition to civilian life. Chapter 3 determines ways that the Higher Education Act is helping achieve those goals, and find areas where there are problems, and where we can make improvements. To help students and their families pay for higher education, the Department of Education provides billions of dollars in federal student loans each year through programs authorized under Title IV of the Higher Education Act as discussed in chapter 4. Chapter 5 discusses the unique challenges facing minority serving institutions and to learn about programs and support to help facilitate student success. Chapter 6 describes the several programs devoted to financially assisting minority-serving institutions (MSIs) under the Higher Education Act. Historically Black Colleges and Universities play an important and unique role in the higher education system and in their local and regional economies. As reported in chapter 7, SBA works with many colleges and universities to provide entrepreneurial training and counseling on campuses.
Higher Education: Role of States, Accreditation and Challenges
Angeo Franklin
In series: Education in a Competitive and Globalizing World
Since the establishment of state land-grant universities, our country has rightly recognized higher education as an essential public good, in the national interest as reported in chapter 1. But states have also played a critical role in an affordable college education through investing and being a key player in oversight and developing strategies to increase degree attainment. Chapter 2 examines (1) the strengths and challenges of the current U.S. accreditation system in overseeing the academic quality of schools, and (2) potential approaches for improving the U.S. accreditation system’s oversight of academic quality. As reported in chapter 3 institutions across the country are providing their students new opportunities to earn a degree. As a result, we’re seeing more diversity on campuses and the idea of a traditional student has been turned on its head. Today’s students come from a wide range of backgrounds, they are at various stages in their lives and careers, and they have new, unique, and changing needs.

Improving the Academic Writing Experience in Higher Education
Tatiana Sanches, PhD (Institute of Education, Lisbon University, Lisbon, Portugal), Maria da Luz Antunes (ESTeSL, Lisbon School of Health Technology (Polytechnic Institute of Lisbon), Lisbon, Portugal) and Carlos Lopes, PhD (ISPA – Instituto Universitário, Lisbon, Portugal)
In series: University Teaching and Faculty Development
e-book: 978-1-53615-672-0. $160.00.
To fulfill their academic purposes in higher education, students must mobilize knowledge learned in the classroom, but also obtained individually and with access to a variety of sources, in particular, the information resources available in their libraries. To achieve an academic degree as master or doctor, information resources grow in importance and meaning, since because from them a great part of the theoretical and methodological support is obtained for the pursuit of this purpose. The validation of their learning is carried out in large part by the written presentation of these academic works. The book reflects on the importance of academic writing and presents methods and techniques for writing in a grounded manner. The contributions that make up the book Improving the Academic Writing Experience in Higher Education aim to bring ideas and share experiences, broaden horizons and shed some light on the landscape of academic writing. The different formulations, perspectives, and approaches are divided into two parts: the first one with a conceptual point of view, explaining the importance of the development of academic writing within the university and theorizing about the transformative impact of this practice on the higher education’ student. The second one seeks to bring a more practical, diversified and comprehensive contribution to the thematic and to respond to the challenge of professionals related to the area – particularly those involved in higher education libraries, but not only – and who work with the transformation of information into knowledge. Through concrete tips for writing appropriately in a university context, the focus is on how and why to write well. The challenge that mobilized the achievement of this book was to encourage better learning and academic success, through awareness of a concrete action of teachers, students, and librarians who, in higher education, develop their activities in support of academic writing. We hope, therefore, that this will be a catalyst for renewed learning around this subject.

Problems in Higher Education: Closures, Sexual Violence and Rising Costs
Angela J. Santiago
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-53615-591-4. $195.00.
Many people in this country grow up dreaming about the college experience hoping to obtain the education and skills they need to be successful in life, but many students face obstacles to pursuing their education. The recent closures of multiple large, private for-profit institutions of higher education (IHEs), such as those owned by Corinthian Colleges, Inc. (e.g., Heald College) and ITT Educational Services (e.g., ITT Technical Institutes) have brought into focus the extent to which a student’s postsecondary education may be disrupted by a school closure. The closures of these IHEs also highlighted the numerous issues students may face when their institutions close and the difficult decisions they may be required to make in the wake of a closure. Two key issues students may face when their IHE closes relate to their academic plans and their personal finances. Chapter 1 provides an explanation of the options a postsecondary student may pursue in the event the IHE he or she attends closes, any financial relief that may be available to such students, and other practical implications for
students following a school’s closure. Recent high-profile incidents of sexual violence on campus have heightened congressional and administrative scrutiny of the policies and procedures that institutions of higher education (IHEs) use to address such violence. Chapter 2 provides background information on sexual violence on campus and its prevalence, descriptions of the Clery Act and Title IX, and an analysis of prominent policy and legal issues related to these two statutes. It also includes a brief description of a related third statute focused on educational privacy. One of the biggest financial challenges in modern life is figuring out how to pay for the cost of college. Over the last 40 years, tuition and fees have increased over 1,200 percent. Chapter 3 looks at what is behind the rising cost of college tuition and to consider whether this Nation’s tax policies are partly to blame.

K-12

Disparities in K-12 Education
Annabelle Lewis

In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-53615-073-5. $160.00.

All students expect to have equal access to a good education but this is not always the case. Research has shown that students who experience discipline that removes them from the classroom are more likely to repeat a grade, drop out of school, and become involved in the juvenile justice system. Black students, boys, and students with disabilities were disproportionately disciplined (e.g., suspensions and expulsions) in K-12 public schools. These disparities were widespread and persisted regardless of the type of disciplinary action, level of school poverty, or type of public school attended. Poverty can have a profound effect on academic outcomes and college readiness and students from low-income families are less likely to go to college. The low rates of degree attainment for low-income students raises questions about whether the students who wish to pursue higher education have access to courses that support their readiness for college. While most public high schools, regardless of poverty level, offered courses like algebra and biology, disparities in access were associated with school poverty level for more advanced courses like calculus, physics, and those that may allow students to earn college credit, like Advanced Placement (AP) courses.

Special Education

Individuals with Disabilities: Education, Employment and Rehabilitation
Aston Delgado

In series: Disability and the Disabled - Issues, Laws and Programs

Since the enactment of P.L. 94-142, the predecessor legislation to the Individuals with Disabilities Education Act (IDEA), in 1975, the federal government has played a prominent role in encouraging the principle of educational equality for children with disabilities through a permanent, broad-scale federal assistance program. The IDEA is a grants statute that provides federal funding for the education of children with disabilities and requires, as a condition for the receipt of such funds, that states agree to provide a free appropriate public education (FAPE; i.e., specially designed instruction provided at no cost to the parents that meets the needs of a child with a disability) to every eligible child. The transition from high school to the workforce can be a challenging time for students, and particularly for those with disabilities who may need additional services or guidance to achieve their goals. Studies have found that some employers are reluctant to hire people with disabilities, due, for example, to their perceptions about the costs of accommodations or the work capacity of people with disabilities. Studies have also found that many individuals with significant disabilities have been employed in sheltered workshops, where they are segregated from other employees and may be paid less than minimum wage.
Manual Sign Acquisition in Children with Developmental Disabilities
Nicola Grove, Ph.D. (University of Kent, Horningsham, Wiltshire, England) and Kaisa Launonen (Department of Psychology & Logopaedics, Faculty of Medicine, University of Helsinki, Finland)
In series: Languages and Linguistics
Hardcover: 978-1-53615-377-4. $270.00.
Manual signs are used worldwide to support the communication and language development of children who have developmental disabilities. This book provides an overview of forty years of research and practice by recognised experts, from a developmental perspective. Uniquely, the book includes contributions on both sign languages and sign systems, linking the two fields of Deaf studies and Augmentative and Alternative Communication which have historically been seen as separate. This text is the most authoritative single text to date on the topic, providing an invaluable resource for speech pathologists, researchers, psychologists and educators. The main sections of the book include: the typical development of sign language and of gesture; literature reviews on sign acquisition in children with disabilities such as Down syndrome, autism spectrum disorders, Llandau Kleffner syndrome and deaf blindness. An important chapter deals with the latest research on sign language impairments in deaf children with developmental language difficulties, or autism spectrum disorders. The third section of the book addresses assessment and intervention, covering vocabulary, sign production difficulties and intelligibility, grammar and multi-signing, and pragmatics and discourse skills. The final two sections are concerned with use of signs in context: in the home, in school, and in different cultures. Throughout, care is taken to ensure that the voices of users are present and vivid, whether these be family members, teaching staff or the children themselves, with an entire chapter given over to an interview with a young adult’s reflections on her use of sign since childhood. The book concludes with a call for a multimodal perspective on augmentative communication to be adopted in the future.

Learning Disabilities

Emotionally, Socially, and Learning Disabled Gifted Children: Theory and Treatment
Hanna David (Tel Aviv University, Emerita, Rishon Lezion, Israel)
In series: Giftedness: Identification, Assessment, Nurturing, and Treatment
Softcover: 978-1-53615-808-3. $95.00.
e-book: 978-1-53615-809-0. $95.00.
This book presents the reader with the main inherent problems of double-exceptionality, namely, the difficulties educators and mental health professionals must deal with when working with gifted disabled children and youths. The first chapter describes ten of these problems; on the one hand, some have been caused by unfamiliarity of the basic terms and definitions of giftedness and on the other, learning or other disabilities; some by treatment failures of gifted disabled children and youths. The main part of the book, chapters 2-5, include six detailed case studies of gifted children and adolescents who were dealing, in some cases, with learning disabilities, but in all cases with social, emotional, psychological and familial issues that jeopardized not only their educational and professional future, but also their well-being and even their mental health. These chapters include also shorter vignettes of gifted disabled young and older children whom I have met in the last thirty years. Some of these cases—both the longer and the shorter case studies—are of students who had considered dropping out of school. This book challenges the assumption that dropping out is necessarily also an educational failure. Some of the cases described did not have a “happy ending”: they describe young people who unsuccessfully tried to be “like everybody else,” an attempt that has always been hard to live with. The last chapter shows that only when all components in the child’s or adolescent’s life, the family, the education system, and the social circle she or he belonged to encouraged and nurtured the child, materializing one’s giftedness while maintaining a high level of well-being and social acceptability can be accomplished. The chapter of the book analyzes these factors while showing how misunderstanding of the child’s needs, along with inability to provide her or him with the proper educational and psychological help might cause “giving up” one’s giftedness, deterioration in the social/emotional situation or both.
Special Topics

A Closer Look at Educational Technology
Maria A. Clausen
In series: Technology in a Globalizing World
2019.
Softcover: 978-1-53616-215-8. $82.00.
e-book: 978-1-53616-215-5. $82.00.
The opening chapter of A Closer Look at Educational Technology identifies the three fundamental obstacles that are currently preventing the development of successful large-scale STEAM projects. It defines an ontology of these projects, labeled Computational STEAM. Next, a case study examines the degree to which teachers in a well-resourced secondary school integrate technology into their teaching. The author, who spent five months at the school studying its journey toward integration, utilized three lenses to determine the degree to which technology integration was successful or not: the presence of student-centered practices, evidence of higher-level thinking, and the Substitution-Augmentation-Modification-Redefinition Framework. The authors discuss the way in which makerspaces proliferate in abandoned cities and factories. Beyond these informal areas, the makers have crossed the walls of formal educational institutions and are making their way into universities. In this line, the integration of makerspaces in universities represents a challenge of the highest level, as it involves breaking the barriers between formal and informal learning. The authors also present an analysis of current trends in educational technology so that readers may assess the feasibility of inclusion and scalability of implementation within their organizations. Practical examples of new technologies currently being used in language classes are presented in the concluding study, and the challenges that they pose to language teachers are outlined.

Adult, Continuing and Lifelong Education and Development in Africa
Akwasi Arko-Achemfuor, Kofi Poku Quan-Baffour, and David Addae (University of South Africa, South Africa)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-53614-527-4. $195.00.
This book addresses current and pertinent issues in adult, community, and lifelong education and development presenting a distinctive and timely focus on Africa. Drawing from a variety of theoretical, methodological, and personal experiences from astute researchers from different parts of the continent, this book re-conceptualises adult, community and lifelong education from a western perspective to a more Afrocentric and indigenous approach to understanding and solving problems in the field. It attempts to fill that gap by placing emphasis on the history of adult, lifelong and community education, its organization and management, and the philosophical and socioeconomic context within which adult, community and lifelong education is provided. This edited book is a comprehensive collection of cutting edge research and analyses of various concepts in the field and offers in-depth explanations from diverse viewpoints. For ease of reference, this book is organized into 17 chapters with each chapter covering a topical issue in a diverse, multifaceted field. All the chapters were subjected to a rigorous review process. Firstly, by the editors before those that met the initial pre-screening were sent to two other reviewers. These steps were taken to ensure that the chapters were within the scope of the book as well as meeting the set standards. The submissions which did not meet the set standards and/or did not fall within the scope of the book were rejected. The ones that were recommended for inclusion by the reviewers were sent to the authors to correct and resubmit. The corrected chapters from the authors were put together as the manuscript which was submitted to an accredited language editor for editing before finally submitting to the publisher. The contributions are on five African countries with all the contributors from Africa. Consequently, this book differs from many publications about African countries written by non-Africans.” Although all the chapters focus on African countries, the scholarly and rigorous discussion by the authors may appeal to international audiences in the field of adult, lifelong and community education.
Africa Handbook for School Leadership

Vitallis Chikoko (University of KwaZulu-Natal, Edgewood Campus, Ashwood, Republic of South Africa)

In series: Education in a Competitive and Globalizing World

Hardcover: 978-1-53615-341-5. $230.00.

This handbook was conceived upon a realisation that while education systems in African countries share many commonalities because of a common history, there was paucity of shared literature regarding school leadership in those systems. Scholars and students of Educational Leadership and Management have for many decades relied, in fact over-relied on literature from Europe, North America and Australia. The dilemma is that literature from the latter regions of the world cannot and will not tell Africa’s story to the full. In many an education system, sound leadership is the missing link not only in the running of the education systems but the entire states. In seeking to deeply understand and address this leadership conundrum, it is imperative that African scholars tell their own African ‘stories’ by way of generating cutting-edge literature in that regard, particularly empirical evidence. This handbook is a one-stop platform on which readers including under- and postgraduate students of education, novice and seasoned researchers in the field of educational leadership and management, education policy makers and non-governmental organisations have an opportunity to consume empirical evidence by African scholars on aspects of school leadership in Africa. Students of comparative education will also find this collection very useful. Non-governmental organisations may find this handbook quite revealing in terms of some of the common issues emerging that may be worth investing funds into. A typical example of such themes is the development of school leaders. Authors were invited to write on a school leadership matter they considered topical in their country. Each author did not have any knowledge about what others were writing about their own countries. Therefore the handbook is a collection of topics unique to a country according to the author in question. Therefore even where the chapter titles may sound similar, the content in each case is contextually different. Context is very important all cases when we seek to understand and write about any subject. This collection is rich in contexts from East, Central, North, West and Southern Africa. Thus, this handbook is ideal in every University Faculty of Education library, in the shelves of education policy makers and in the hands of all those who are passionate about advancing educational leadership on the African continent and the scholarship of this field worldwide.

Developing Cross-Cultural Exchange Projects: A Step-By-Step Guide

Ai-Ling Wang (Tamkang University, New Taipei City, Taiwan)

In series: Education in a Competitive and Globalizing World

2019.
Hardcover: 978-1-53616-160-1. $230.00.

Developing Cross-Cultural Exchange Projects: A Step-by-Step Guide aims at providing readers with a systematic guide to cross-cultural encounters, either at home or abroad, in a globalizing era. It is a useful and a valuable guide for teachers, students, school heads and administrators, agencies of language proficiency tests, police makers, material developers, owners and managers of multicultural corporates, and other non-governmental organizations. Different groups of readers can find useful parts of information based on their needs and objectives. It is especially useful for professors in higher education and practitioners of cross-cultural exchange projects because the book is organized in a sequential manner to guide them step by step to reach their goal, starting from the initial design of the project and the research method and recruiting students to evaluation of the students and the entire project at the final stage of the project. For students who are planning to work on their higher degree in a foreign country, this book covers much useful information for them to make the best decision before they head for a foreign country. Cross-cultural exchanges in this book is defined broadly to cover anything involving people from different cultures, including student mobility, teacher mobility, cross-border collaborations or partnerships, working abroad, and distance education. One of the important features of this book is that it covers a considerable number of examples and empirical studies reported by practitioners of different types of cross-cultural exchange projects. Readers may learn from their experiences of success or failure so that they may feel easier and more comfortable to be prepared for their forthcoming cross-cultural experiences. Finally, in the last chapter, the author envisions the future of cross-cultural exchanges to remind readers that cross-cultural exchanges, like globalization, is dynamic and an on-going practice. The future of cross-cultural exchanges will surely change in accordance with the change of the global community. Practitioners of cross-cultural exchanges need to be aware of the subtle differences happening around the globe and to adjust their cross-cultural exchange projects accordingly to best fit the current situation.
Exploring the Opportunities and Challenges of International Students

Michael Allison

In series: Education in a Competitive and Globalizing World
Softcover: 978-1-53616-242-4, $95.00.

Exploring the Opportunities and Challenges of International Students opens with a focus on Taiwanese international students by defining the Taiwanese within historical and political context, providing an overview of the trends in studying abroad, as well as a literature review on Taiwanese international students’ adjustment process. Following this, the authors present an argument for integrating psychological, social and academic perspectives, highlighting the interrelation between these domains in empirical data collected using a new, integrated measure of students’ academic, social and psychological adjustment. Using a multi-university sample, the subsequent chapter presents a study of how types of emotional support play a role in how young Chinese international students’ experience academic stresses. In the penultimate study, in order to investigate students’ expectations and experiences when studying abroad, a group of outbound exchange students at Unna University, Sweden, were surveyed before and after the experience of studying in a foreign country. In the concluding
paper, the authors examine the challenges faced by international students in integrating into computer science programs at various institutions, identifying differences in student and faculty perceptions.

**Issues in Education**

*Kristi Chavez*


Hardcover: 978-1-53615-177-0. $195.00.

The opening chapter of Issues in Education is a primer on existing STEM education policy issues and programs. Chapter 2 focuses on early observations on changes some states are making to their K-12 accountability systems in reaction to the Every Student Succeeds Act of 2015 (ESSA). The benefits and risks of AI in classrooms, including the impact of AI on issues such as student data privacy, teacher preparation, and technology development and procurement are reviewed in chapter 3. Chapter 4 examines (1) what is known about suspensions and expulsions in D.C. charter schools, and (2) to what extent PCSB oversees charter schools’ use of suspensions and expulsions. The extent to which (1) school districts are testing for, finding, and remediating lead in drinking water is discussed in chapter 5. Chapter 6 provides a detailed discussion of each of the four Title I-A formulas used to determine grants under The Elementary and Secondary Education Act (ESEA).

**Key Congressional Reports on Education**

*Georgia Turner*


Hardcover: 978-1-53615-731-4. $195.00.

This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service on education during the month of January and February.

**Onboarding 2.0: Methods of Designing and Deploying Effective Onboarding Training for Academic Libraries**

*Monica D.T. Rysavy, Ph.D. and Russell Michalak MLIS (Goldy-Beacom College, Wilmington, DE, US)*

In series: *University Teaching and Faculty Development* 2019. 201 pp.

Softcover: 978-1-53614-747-6. $95.00.
e-book: 978-1-53614-748-3. $95.00.

This book provides a comprehensive overview of onboarding library staff, paraprofessionals, and student workers in academic libraries. This book details examples of current literature regarding onboarding and libraries, and highlights the use of cases concerning institutions’ efforts creating onboarding programs for library staff. The chapters in this collection focus on a variety of onboarding practices geared towards training new hires within academic libraries. The use of cases provided emphasizes practical suggestions to improve processes and are often applicable to both library staff and student workers. This book is a must read for all administrators, trainers, and instructional designers as tips, best practices, and lessons learned are applicable to any academic department seeking innovative ways to onboard their staff. The contributors to this collection are associated with colleges and universities from around the United States. The authors have a broad range of educational and professional experience and offer unique insights into the wide variety of methods utilized to design and provide onboarding in academic libraries. This book fills in the gap concerning the current literature for academic administrators, library staff, instructional designers, and trainers.
Research in Education: Teacher Training Issues
Fernando Córdova Lepe, Ph.D. (Universidad Católica del Maule, Talca, Chile) and Héctor Rojas Castro (Universidad Católica del Maule, Talca, Chile)

In series: Education in a Competitive and Globalizing World
Softcover: 978-1-53614-914-2. $95.00.

At a global level, governmental and public institutions are making, through performance improvement plans, concerted efforts to meet the needs of their education systems in certain key areas by looking for relevance and efficiency. One of these key areas is related to academic training programs targeted at teachers and professors. In this respect, special attention is being devoted to the tertiary education level (also referred to as the “third stage” or “postsecondary education”). Teacher training for primary and secondary levels are included in the main focus of the Training of Trainers procedure, which refers to providing new trainers with the background knowledge, skills and practical experience to enhance their role. This book includes varied research articles associated to the initial training of teachers in a wide range of areas and developed by groups of researchers linked to one of the abovementioned plans in a Chilean university. It is a small sample of the results that have facilitated these types of initiatives as well as the establishment of stable and cooperative research nuclei of work in areas such as educational vulnerability; family, school and community; citizen education; and even didactic strategies applied to science and mathematics.

Student Aid: Management, Certification and Recommendations
Peter Freitag

In series: Financial Institutions and Services

The Office of Federal Student Aid (FSA) is a Principal Office of the Department of Education (Education) and is tasked with ensuring that all eligible students enrolled in postsecondary educational schools benefit from federal financial assistance for education and training. The objectives of chapter 1 are: to describe how FSA and schools use information they collect to manage the federal student aid program, determine the extent to which FSA policies and procedures for managing and protecting this information align with federal requirements, describe the extent to which schools have established policies and procedures for managing student aid information, and determine the extent to which FSA ensures that schools protect this information. Chapter 2 examines how Education certifies schools to administer federal student aid and how frequently schools are approved and denied certification; and the role of compliance audits in the certification process and what, if any, steps Education has taken to address the quality of the audit information. Chapter 3 describes the need analysis formulas used to calculate the Expected Family Contribution (EFC) for federal student aid applicants. The Department of Education’s Office of Federal Student Aid (FSA) partners with various entities (“non-school partners”) that are involved primarily in supporting the repayment and collection of student loans. The objectives of chapter 4 are to describe the roles of non-school partners and the types of personally identifiable information (PHI) shared with them and assess the extent to which FSA policies and procedures for overseeing the non-school partners’ protection of student aid data adhere to federal requirements, guidance, and best practices. Chapter 5 examines how schools work with borrowers to manage schools’ cohort default rates, and how these strategies affect borrowers and schools’ accountability for defaults, and the extent to which Education oversees the strategies schools and their default management consultants use to manage schools’ cohort default rates and informs the public about its efforts to hold schools accountable. Chapter 6 examines the status of Education’s efforts to implement prior recommendations for improving oversight of federal student loan servicers. Year after year, more student loan dollars are disbursed than are repaid, resulting in an expanding federal loan portfolio as described in chapter 7.

Student Loans: Reports, Testimonies and Legal Decisions
Steve Douglas

In series: Congressional Policies, Practices and Procedures
Softcover: 978-1-53615-085-8. $95.00.
e-book: 978-1-53615-086-5. $95.00.

The government documents included in this book are comprised of reports and testimonies from April 2018 to September 2018 on Student Loans. As of April 2018, over a million borrowers had taken steps to pursue Public Loan Forgiveness (PSLF) from the Department of Education, but few borrowers have been granted loan forgiveness to date. The first report examines the 1. Number of Borrowers pursuing PSLF and the extent to which Education has conducted outreach to increase borrower awareness of program eligibility requirements and 2. The extent to which Education has provided key information to PSLF servier and borrowers. Recommendations follow. The second report describes the roles of Federal
Student Aid’s (FSA) non-school partners in the federal student financial aid program and assesses the extent to which FSA’s policies and procedures for overseeing non-school partners’ protection of federal student aid data align with federal requirements, federal guidance and best practices. The third report examines how schools work with borrowers to manage schools’ cohort default rates and how these strategies affect borrowers and schools’ accountability for defaults, and the extent to which Education oversees the strategies schools and their default management consultants use to manage schools’ cohort default rates and informs the public about its efforts to hold schools accountable. Finally, the last report examines the status of Education’s efforts to improve oversight of federal student loan services. Federal loans play a key role in ensuring access to higher education for millions of students each year. This report provides testimony over the last 3 years examining the weaknesses in Education’s management and proposals for a new student loan servicer system.

**Student Teaching: Perspectives, Opportunities and Challenges**
*Leon Jung*

In series: *Education in a Competitive and Globalizing World*  
Sofcover: 978-1-53615-983-7. $82.00.  
e-book: 978-1-53615-984-4. $82.00.

Through the research examined in the opening chapter of Student Teaching: Perspectives, Opportunities and Challenges, the authors determine that it is necessary for elementary teacher candidates to be strengthened in the pedagogical level related to culturally responsive teaching during the undergraduate education process, and graduate as culturally responsive elementary teachers. Next, a study is presented which investigates the effects of multiple intelligence practices on secondary school students’ environmental literacy levels. The results reveal that a learning environment enriched by multiple intelligence activities significantly improved the participants’ environmental literacy levels. The final study explores three Andalusia universities (that are part of the 17 autonomous regions making up Spain) and how they regard the knowledge of prospective primary teachers in the area of metric geometry.

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**HUMANITIES**

**Art**

**Advances in Arts Biomechanics**
*Gongbing Shan and Peter Visentin (University of Lethbridge, Canada)*

In series: *Fine Arts, Music and Literature*  

Attitudes toward the role of the Arts in society are as varied as they are numerous, ranging from “the Arts are a (nice) diversion” to “while many things may be necessary to make living possible, it is the Arts that make life worth living.” In the last few decades, research in the areas of psychology, neuroscience and sociology have underpinned the positive health benefits of the arts as well as artists’ roles in encouraging innovative thinking and the development of novel perspectives for the betterment of society. But, artists work within the existence of boundary conditions. For even the most subversive of artistic creations, the act of subversion is inherently referential to the condition that is being subverted. Furthermore, adaptation of “our modes of perception borrowed from the sensations” are hindered by the reality that “every word in the language refers to our ordinary perceptions” (Neils Bohrs, Nature Supplement, April 14, 1928), and is thus mediated by both the design capacities and limitations of the human form and the ways in which we express that experience. Hence, by examining multiple facets of the commonality of bodily experience Arts Biomechanics explores the human capacity to translate between the perspectives of self and other. Arts Biomechanics as a field of study uses the tools and methods of science to understanding the bodily experience within artistic creation. Desired aesthetic outcomes are influenced by: 1) how an artist might use metaphor or symbolism rooted in bodily experience, 2) how an artist might experience the act of creation, 3) how a performance of an artistic act may be better understood through analysis of physical skills necessary for that act, 4) how the act of challenging creative boundaries might challenge the capacity of the body, and 5) how representations and perception of the human condition are mediated by technology – “the medium is the message” ( Marshal McCluhan, Understanding Media: the Extensions of Man, 1964). In all of these areas Arts Biomechanics allows a deeper discourse, rooted in the commonality of bodily experience, exploring the relationships between modes of perception and communication of our individual experiences. Advances in Arts Biomechanics has twelve chapters covering music, dance, and the visual & media arts. It is organized in three parts. The first part, music research, has articles covering fundamental theory, proof of principles, musicians’ health, motor control/learning and its application in practice. Many of these are meaningful for both pedagogy and performance. The
second part, dance articles, examines the biomechanics of dancing, kinematics and kinetics, injury prevention, and biomechanical foundations of intercultural representations of gender roles. Finally, two visual & media arts articles discuss motion capture use in performance and artistic creation as well as its communication to an audience, linking bodily gesture to the performative act whether on stage or on canvas. These innovative articles represent advances in thinking regarding biomechanics and the arts. By their very nature, using the tools and methods of science to better understand the visual and performance arts, all are interdisciplinary. We hope that the included articles challenge and inspire researchers and artists in the pursuit of transdisciplinary ways of knowing and creating in the arts.

American Masters of Painting and Sculpting
Charles H. Caffin
In series: Focus on Civilizations and Cultures - Paintings and Sculptures
This is a compilation of two books by Charles H. Caffin. American Masters of Painting contains biographies of important American painters. American Masters of Sculpting contains the biographies of important American sculptors. This culturally important book encourages interest in the arts.

Pottery: History, Preparation and Uses
Lorraine Doyle
In series: Focus on Civilizations and Cultures
2019.
Softcover: 978-1-53615-955-4. $82.00.
e-book: 978-1-53615-956-1. $82.00.
Pottery: History, Preparation and Uses opens with a discussion of silicates, the most abundant minerals on the Earth’s crust. Clays (which are silicates) were used by ancient people for making pottery, bricks, and tablets for writing. The authors propose that by using a methodology borrowed from educational psychology, both the motor skills and cognitive development of various individuals may be evaluated through the analysis of brush strokes, decorative syntax, vessel symmetry, and finger marks. In this way, it is possible to determine to what extent children were involved in producing pottery in the Middle and Late Bronze Ages on Cyprus. Additionally, the authors report on the 3D shape measurement and microtopographic characterization of archeological pottery artifacts by optical active triangulation. The MICROTOP.06.MFC laser microtopographer developed at the Microtopography Laboratory of the University of Minho, Portugal, is employed to determine the statistical surface-characterization parameters and obtain 3D relief maps of the surface and different structures of archeological pottery. In closing, an analysis of the functionality of 1,133 complete Iberian vessels dated from the 6th century BC until 1st century AD is provided. This analysis is carried out not only synchronically, differentiated by settlements, but also in a diachronic way.

History

Audubon the Naturalist: A History of His Life and Time. Volume I
Francis Hobart Herrick
In series: Historical Figures
A biography of the gifted ornithologist, animal painter, and writer whose extensive depictions of birds are still considered a monumental achievement in the worlds of animal biology and art. Historical illustrations, photographs, and original documents are presented throughout the book.

Audubon the Naturalist: A History of His Life and Time. Volume II
Francis Hobart Herrick
In series: Historical Figures
Hardcover: 978-1-53615-589-1. $230.00.
A biography of the gifted ornithologist, animal painter, and writer whose extensive depictions of birds are still considered a monumental achievement in the worlds of animal biology and art. Historical illustrations, photographs, and original documents are presented throughout the book.
Beacon Lights of History. Volume I: The Old Pagan Civilizations
John Lord, LL.D
In series: Historical Figures
Beacon Lights of History is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.

Beacon Lights of History. Volume II: Jewish Heroes and Prophets
John Lord, LL.D
In series: Historical Figures
Beacon Lights of History is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.

Beacon Lights of History. Volume III: Ancient Achievements
John Lord, LL.D
In series: Historical Figures
Hardcover: 978-1-53615-149-7. $195.00.
Beacon Lights of History is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.

Beacon Lights of History. Volume IV: Imperial Antiquity
John Lord, LL.D
In series: Historical Figures
e-book: 978-1-53615-186-0. $195.00.
Beacon Lights of History is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.

Beacon Lights of History. Volume V: The Middle Ages
John Lord, LL.D
In series: Historical Figures
Beacon Lights of History is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.

Beacon Lights of History. Volume VI: Renaissance and Reformation
John Lord, LL.D
In series: Historical Figures
Beacon Lights of History is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.
Beacon Lights of History. Volume VII: Great Women
*John Lord, LL.D*
In series: *Historical Figures*
*Beacon Lights of History* is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.

Beacon Lights of History. Volume VIII: Great Rulers
*John Lord, LL.D*
In series: *Historical Figures*
Hardcover: 978-1-53615-211-1. $195.00.
*Beacon Lights of History* is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.

Beacon Lights of History. Volume IX: European Statesmen
*John Lord, LL.D*
In series: *Historical Figures*
Hardcover: 978-1-53615-213-5. $195.00.
*Beacon Lights of History* is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.

Beacon Lights of History. Volume X: European Leaders
*John Lord, LL.D*
In series: *Historical Figures*
Hardcover: 978-1-53615-242-5. $195.00.
*Beacon Lights of History* is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.

Beacon Lights of History. Volume XI: American Founders
*John Lord, LL.D*
In series: *Historical Figures*
Hardcover: 978-1-53615-244-9. $195.00.
*Beacon Lights of History* is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.

Beacon Lights of History. Volume XII: American Leaders
*John Lord, LL.D*
In series: *Historical Figures*
Hardcover: 978-1-53615-246-3. $195.00.
e-book: 978-1-53615-247-0. $195.00.
*Beacon Lights of History* is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.
Beacon Lights of History. Volume XIII: Great Writers
John Lord, LL.D
In series: Historical Figures
Beacon Lights of History is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.

Beacon Lights of History. Volume XIV: The New Era
John Lord, LL.D
In series: Historical Figures
Hardcover: 978-1-53615-266-1. $230.00.
Beacon Lights of History is a 14-volume set first published in 1902. This collection of John Lord’s lectures spans 6,000 years of European and American history. The first 12 volumes are all Lord’s work; the 13th was completed from his notes and the 14th is follow-ups by other authors.

Colonization and Christianity: A Popular History of the Treatment of the Natives by the Europeans in All Their Colonies
William Howitt
In series: Religion and Society
The object of this volume is to lay open to the public the most extensive and extraordinary system of crime which the world ever witnessed. It is a system which has been in full operation for more than three hundred years, and continues yet in unabating activity of evil. The apathy which has hitherto existed in England upon this subject has proceeded in a great measure from want of knowledge. National injustice towards particular tribes, or particular individuals, has excited the most lively feeling, and the most energetic exertions for its redress,—but the whole wide field of unchristian operations in which this country, more than any other, is engaged, has never yet been laid in a clear and comprehensive view before the public mind. It is no part of the present volume to suggest particular plans of remedy. The first business is to make known the nature and the extent of the evil,—that once perceived, in this great country there will not want either heads to plan or hands to accomplish all that is due to the rights of others, or the honour and interest of England.

Genghis Khan. Makers of History Series
Jacob Abbott
In series: Historical Figures
The word khan is not a name, but a title. It means chieftain or king. It is a word used in various forms by the different tribes and nations that from time immemorial have inhabited Central Asia, and has been applied to a great number of potentates and rulers that have from time to time arisen among them. Genghis Khan was the greatest of these princes. He was, in fact, one of the most renowned conquerors whose exploits history records.

History of the Conquest of Mexico. Volume 1
Author: William H. Prescott
Edited By Wilfred Harold Munro
In series: Political Science and History
e-book: 978-1-53616-365-0. $230.00.
William Hickling Prescott’s History of the Conquest of Mexico presents the conquest of Mexico between 1519 and 1521 in four volumes. Although blind and having never traveled to the Americas, Prescott’s account of the conquest of the Aztecs is as highly respected by historians today as it was in the 19th century.
William Hickling Prescott's History of the Conquest of Mexico presents the conquest of Mexico between 1519 and 1521 in four volumes. Although blind and having never traveled to the Americas, Prescott’s account of the conquest of the Aztecs is as highly respected by historians today as it was in the 19th century.
Predecessors of Cleopatra
Leigh North
In series: Historical Figures
Hardcover: 978-1-53614-974-6. $230.00.
In attempting even a brief and imperfect outline of the history of Egyptian queens the author has undertaken no easy task and craves indulgence for its modest fulfillment. The aim has been merely to put the little that is known in a readable and popular form, to gather from many sources the fragments that remain, partly historic, partly legendary, of a dead past. To present—however imperfectly—sketches of the women who once lived and breathed as Queens of Egypt.

Tedo Zhordania: A Researcher of the History of Georgia
Ketevan Nadiradze (Associate Professor at the Faculty of Humanities, Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia)
In series: European Political, Economic, and Security Issues
Softcover: 978-1-53614-868-8. $85.00.
This work presents the first monographic study of Tedo Zhordania’s life (1853 – 1916) as a scholar tirelessly exploring the history of Georgia, whose heritage presents a genuinely significant case of 19th century Georgian historiography. Following the tendency practised in the 19th century, scholars exploring issues of Georgian studies did not observe thematic and chronological boundaries; therefore, the heritage of Zhordania is various and multicoloured. He was involved in studying manuscripts and sources as well as in exploring issues of social-political and Church history of the medieval period. This fact makes the description of the scholar’s heritage even more interesting as it gives the reader an opportunity to follow the development of research regarding the issues Zhordania was interested in from the 19th century up to 1900. The monograph explains why historical studies should know more about the scholarly heritage of Zhordania and the methodology of his research. In addition, it substantiates the significance of the conclusions made by him from the modern standpoint and determines the extent of the impact on the enhancement of Georgian historical thought. In order to achieve this, the full picture of Zhordania’s life as a statesman and public figure has been confirmed. His contribution, both to the development of Georgian historical thought and maintaining and enhancing Georgian mentality whilst suffering Russian assimilatory politics has been revealed. Zhordania’s works have also been studied in order to reconstruct the process of work attached to him. The best way to explore Zhordania’s work is via notes made by the scholar in his writing pads, block notes as well as in the margins of books read by him and articles written by him or about him in the periodicals of the 19th century [such as “Iveria”, “Mtskemsi” (“The Shepherd”), “Tsnobis Purtsel” (“Information Leaflet”); “Kvali” (“The Trace”); “Духовныйвестник Грузинского экзархата” (“The Spiritual Herald of the Georgian Exarchate”), and “Кавказ” (“The Caucasus”)]. All were explored and analysed. Due to the emerging and increasing interest in the development of general scholarly thought of the 19th century, this book is notable for readers interested in Georgian history. They can follow the development of Georgian historical science in the second half of the 19th century and the beginning of the 20th century when the Georgian in-group was being consolidated under the Russian colonial regime. As is known, actualisation of the historical past acquired a special significance in that period. Thus, presenting the facts of social and scholarly work by Zhordania seems crucial for reconstruction of the full picture of this process. Due to the above-mentioned factors, the portrayal of a Georgian historian is equally interesting from the point of view of the history of the Georgian identity. The scholarly heritage of Tedo Zhordania is explored in this monograph based on the comparative method. The previous research concerning the issues he worked on, his personal contribution and the development by subsequent Georgian researchers is taken into account.

The Fifty Greatest Women in History
Michael F. Shaughnessy (Eastern New Mexico University, Portales, New Mexico, US) and Donald C. Elder III (Eastern New Mexico University, NM, US)
In series: Women’s Issues
Hardcover: 978-1-53616-130-4. $160.00.
Over the past several hundred years, many women have made major, significant contributions to society, to their countries and to their field of endeavor—be it literature, music, art, politics or the enhancement of women in general. Many of these women have not received the acknowledgement and recognition that they deserve. This book is an attempt to rectify that deficiency. In a warm, storytelling fashion, the authors lay out the scenarios and contributions of fifty of the most famous women of history. These individuals have accomplished great things, not only in their time period, but often against great odds and difficulties. Students of history and students in general need to be aware of the contributions of these women.
Certainly there are others that arguably could be included, but this is a first attempt to sensitize the students of this century to the great accomplishments of the women who came before them, and established a foundation for a just, equitable society wherein all women are valued, recognized and acknowledged. Students of history will find this panoramic overview a rich robust source of knowledge and proponents of women’s issues will tend to recognize the grandeur and splendor of women’s contributions to civiliztion and humanity in general.

The Russian Turmoil: Memoirs: Military, Social, and Political
Anton Denikin
In series: Political Science and History
Anton Ivanovich Denikin was an officer in the Russian army stationed in the Western Front during the Revolution. This memoir deals chiefly with the disintegration of the Russian army and its participation in the progress of the Revolution.

African History

What Led to the Discovery of the Source of the Nile
John Hanning Speke
In series: African Studies
2020.
Hardcover: 978-1-53616-464-0. $195.00.
John Hannin g Speke writes about the history of his first two explorations in Africa that led to the discovery of the source of the Nile. The manner in which he traced the Nile down from the Victoria N’yanza, which is the great source or reservoir of the Nile, to Egypt is explained in this book.

Asian History

The Russo-Japanese Conflict: Its Causes and Issues
K. Asakawa, PhD
In series: Asian Political, Economic and Social Issues
Hardcover: 978-1-53614-880-0. $230.00.
The issues of the conflict that forms the topic of this little volume are bound inevitably to influence the future of the civilized world for many years. Dr. Asakawa presents them with a logical thoroughness that reminds us of the military operations of his countrymen now in evidence elsewhere. It is the sort of presentation which a great subject needs. It is content with a simple statement of fact and inference. It is convincing because of its brevity and restraint.

Canadian History

The Tragic Story of the Empress of Ireland
Logan Marshall
In series: Canada: Past, Present and Future
The Tragic Story of the Empress of Ireland is an authentic account of one of the most horrible disasters in Canadian history. Soon after leaving Quebec on her voyage to Liverpool with over 1,300 souls on board, she was struck by the Norwegian collier “Storstad” off Father Point, Quebec, on May 29, 1914, at 2.10 a.m., and sank about fifteen minutes later, carrying a thousand of her passengers down with her.
**European History**

**A Short History of the Royal Navy, 1217-1815. Volume I**  
*David Hannay*

In series: *Political Science and History*  
Hardcover: 978-1-53615-472-6. $310.00.  

David Hannay endeavours to give a popular, but clear and not inaccurate, account of the growth, and services, of the Royal Navy. The books is divided into two volumes. The first volume begins with King John and ends at the Revolution of 1688. The second volume will give the history of the great struggle with France and her dependent allies, which began in 1689, and ended only when the time of great naval wars was over.

**A Short History of the Royal Navy, 1217-1815. Volume II**  
*David Hannay*

In series: *Political Science and History*  
Hardcover: 978-1-53615-476-4. $310.00.  

David Hannay endeavours to give a popular, but clear and not inaccurate, account of the growth, and services, of the Royal Navy. The books is divided into two volumes. The first volume begins with King John and ends at the Revolution of 1688. The second volume will give the history of the great struggle with France and her dependent allies, which began in 1689, and ended only when the time of great naval wars was over.

**Adventures with the Connaught Rangers 1809-1814**  
*William Grattan, Esq Charles Oman*

In series: *European Political, Economic, and Security Issues*  
e-book: 978-1-53614-877-0. $230.00.

William Grattan was a young Irish Lieutenant who served in the famous Connaught Rangers [the 88th regiment] in some of the hottest engagements of the Peninsula War. Adventures with the Connaught Rangers 1809–1814 is a memoir of his service with the 1st Battalion of the 88th regiment. Vividly written and accompanied by maps, this is one of the most famous fighting memoirs of the Peninsula War.

**England in America, 1580-1652**  
*Lyon Gardiner Tyler*

In series: *Political Science and History*  
Hardcover: 978-1-53616-152-6. $195.00.  

This book covers a period of a little more than three-quarters of a century. It begins with the first attempt at English colonization in America, in 1576, and ends with the year 1652, when the supremacy of Parliament was recognized throughout the English colonies. The original motive of colonization is found in English rivalry with the Spanish power; and the first chapter of this work tells how this motive influenced Gilbert and Raleigh in their endeavors to plant colonies in Newfoundland and North Carolina. Though unfortunate in permanent result, these expeditions familiarized the people of England with the country of Virginia—a name given by Queen Elizabeth to all the region from Canada to Florida—and stimulated the successful settlement at Jamestown in the early part of the seventeenth century. With the charter of 1609 Virginia was severed from North Virginia, to which Captain Smith soon gave the name of "New England"; and the story thereafter is of two streams of English emigration—one to Virginia and the other to New England. Thence arose the Southern and Northern colonies of English America, which, more than a century beyond the period of this book, united to form the great republic of the United States.
History of European Morals: From Augustus to Charlemagne. Volume I
William Edward Hartpole Lecky
In series: Historical Figures
Hardcover: 978-1-53614-922-7. $310.00.
This 2 part book, originally published in 1890, was written to help students of morals comprehend the significance of morals. The questions with which an historian of morals is chiefly concerned are the changes that have taken place in the moral standard and in the moral type, the degrees in which, in different ages, recognised virtues have been enjoined and practiced and the relative importance that in different ages has been attached to different virtues.

History of European Morals: From Augustus to Charlemagne. Volume II
William Edward Hartpole Lecky
In series: Historical Figures
Hardcover: 978-1-53614-924-1. $270.00.
This two volume book, originally published in 1890, was written to help students of morals comprehend the significance of morals. The questions with which an historian of morals is chiefly concerned are the changes that have taken place in the moral standard and in the moral type, the degrees in which, in different ages, recognised virtues have been enjoined and practiced and the relative importance that in different ages has been attached to different virtues.

History of Julius Caesar. Volume 1
Napoleon III
In series: Political Leaders and Their Assessment
2019.
Hardcover: 978-1-53616-411-4. $230.00.
The aim of the History of Julius Caesar is to prove that, when Providence raises up such men as Caesar, Charlemagne, and Napoleon, it is to trace out to peoples the path they ought to follow; to stamp with the seal of their genius a new era; and to accomplish in a few years the labour of many centuries. Happy the peoples who comprehend and follow them! Woe to those who misunderstand and combat them!

History of Julius Caesar. Volume 2
Napoleon III
In series: Political Leaders and Their Assessment
2019.
Hardcover: 978-1-53616-413-8. $270.00.
The aim of the History of Julius Caesar is to prove that, when Providence raises up such men as Caesar, Charlemagne, and Napoleon, it is to trace out to peoples the path they ought to follow; to stamp with the seal of their genius a new era; and to accomplish in a few years the labour of many centuries. Happy the peoples who comprehend and follow them! Woe to those who misunderstand and combat them!

Louis XIV. Makers of History Series
John S. C. Abbott
In series: Historical Figures
Hardcover: 978-1-53615-940-0. $195.00.
We all live a double life: the external life which the world sees, and the internal life of hopes and fears, joys and griefs, temptations and sins, which the world sees not, and of which it knows but little. None lead this double life more emphatically than those who are seated upon thrones. Though this historic sketch contains allusions to all the most important events in the reign of Louis XIV., it has been the main object of the writer to develop the inner life of the palace; to lead the reader into the interior of the Louvre, the Tuileries, Versailles, and Marly, and to exhibit the monarch as a man, in the details of domestic privacy.
Moorish Remains in Spain
Albert F. Calvert
In series: Political Science and History
2020.
Hardcover: 978-1-53616-510-4. $160.00.
Moorish Remains in Spain is an architectural presentation of the legacy of Islam in Andalusia. Including details of the great mosque in Cordova and also architectural gems from Seville, with illustrations, plates and decoration sketches. The book also includes a historical account of the Muslim presence in Spain.

Now It Can Be Told
Philip Gibbs
In series: Political Science and History
2020.
Now It Can Be Told contains aspects of the war the world must know and remember, not only as a memorial of men’s courage in tragic years, but as a warning of what will happen again—surely—if a heritage of evil and of folly is not cut out of the hearts of peoples. Here it is the reality of modern warfare not only as it appears to British soldiers but to soldiers on all the fronts where conditions were the same. The purpose of this book is to get deeper into the truth of this war and of all war—not by a more detailed narrative of events, but rather as the truth was revealed to the minds of men.

The Campaigns and History of the Royal Irish Regiment from 1684 to 1902
G. le M. (George Le Mesurier) Gretton
In series: Political Science and History
The Campaigns and History of the Royal Irish Regiment 1684-1902 by Lt. Col G. Le M. Gretton is the complete military history of the Royal Irish Regiment from the late 17th century to the early 20th century.

The Chief Periods of European History
Edward A. Freeman
In series: Political Science and History
Softcover: 978-1-53615-723-9. $95.00.
The Chief Periods of European History is about the birth of modern Europe, tracing the history from the end of the Middle Ages and the Renaissance into the modern era. The book contains six lectures read in the University of Oxford in Trinity Term, 1885. It also contains the essay “Greek Cities under Roman Rule,” as an appendix.

The Grandeur That Was Rome
J.C. Stobart
In series: Focus on Civilizations and Cultures
In series: Political Science and History
e-book: 978-1-53616-112-0. $230.00.
Athens and Rome stand side by side as the parents of Western civilisation. The resemblances between Rome and Greece even from the first are very clearly marked. In many respects they are visibly of the same family, and, though we no longer speak as confidently of “Aryan” and “Indo-European” as did the ethnologists and philologists of the nineteenth century, yet there remains an obvious kinship of language, customs, and even dress.
The Hungarians: Borders of Language and Dilemmas of Identity
Yehuda Cohen, Ph.D. (Independent Researcher, Formerly – A Postdoctoral Researcher at the Political Science Department of the Hebrew University in Jerusalem, Jerusalem, Israel)
In series: Post-Nationality in the European Union’s East and North
This volume provides deep insight into the Hungarians based on a detailed description of their history through more than a thousand years. The volume reaches the conclusion that, despite the national feelings of the Hungarians towards themselves and their heritage, they have recently carried out an internal process of transition over Hungarian sovereignty, having decided to grant the EU and its institutions sovereignty in Hungary over the supreme institutions of the Hungarian state, including the Parliament and the Constitutional Court. They attributed themselves to the broad European group that is in the process of crystallizing within the European Union – perhaps very much – the formation of a Pan-European nation linked to its homeland, which is Europe. The Hungarians channeled their pride as Hungarians towards standing on the path they had built within the EU’s domestic politics. The volume describes that during the period of the existence of the Soviet bloc in Eastern Europe, their Prime Minister, Kádár, the Communist-Hungarian leader who led them, was viewed by them as a person who protected Hungarian interests and character. Such preservation of Hungarian interests and character also existed during the Austro-Hungarian Empire period. For hundreds of years before the Turkish-Ottoman occupation, which lasted for 150 years, the Hungarians had been ruled by their own monarchy, of which the Hungarians were proud. Since their arrival in the Carpathian Basin at the end of the 9th century under the leadership of Árpád and the acceptance of Christianity by them towards the year 1000, the Hungarians experienced major national events, including the Mongol invasion of Hungary in 1241, in which half of all Hungarians were killed. Following this invasion and the devastating loss of life that took place, the Hungarians absorbed many Europeans, mainly from Germany, who then became Hungarians. The Hungarian peasantry’s involvement in political events of the Hungarians began before the peasants’ rebellion led by Dózsa in 1514. This created a Hungarian folk nationality – more than 300 years before the idea of nationality emerged in Europe. This volume is authored by Dr. Yehuda Cohen, who has intensively studied 10 European groups in two series dealing with nationality and post-nationality in Europe; he presents the novel notion that one pan-European nationality may take the place of a national vacuum that has been created in Europe after national groups in continental Europe have become post-nationalities. The ten groups investigated by Dr. Cohen are the Germans, the French, the Spanish, the Italians, the British, the Dutch, the Poles, the Hungarians, the Bulgarians and the Swedes. Of all these, the British alone were found to keep their nationality and prefer it over their European affiliation; the British alone were thus expected to leave the EU (the volume on the British coming to that conclusion had been published in 2014, more than a year before the referendum about the Brexit). Dr. Cohen also recently published a book on Islam and Muslims in Europe.

Vagabonding Through Changing Germany
Harry A. Franck
In series: Political Science and History
e-book: 978-1-53614-921-0. $230.00.
Vagabonding Through Changing Germany is an account of the author’s travels in Germany in 1919, a few months after World War I. The author highlights the economic hardships and growing anti-Semitism of the that time.

History of Religion

History of the Jesuits: Their Origin, Progress, Doctrines, and Designs
Giovanni Battista Nicolini
In series: Religion and Society
Giovanni Battista Nicolini wrote this book hoping to convey to readers a just and correct idea of the character and aims of the brotherhood of Loyola. Previously, there was no serious and complete history of this Society.
Chile: Environmental History, Perspectives and Challenges
Alberto J. Alaniz (Geographer, Researcher, Center for Spatial Ecology and Environment, Ecogeografía, Santiago, Chile)

In series: Environmental Research Advances

Chile is located in the Southern Cone of South America; it has a high diversity of landscapes, which have been considered by naturalists and scientists as an irreplaceable patrimony of nature. This country has more than 4,000 kilometers of latitudinal extension, with deserts, agricultural valleys, large mineral deposits, ancient forests, relict and endemic species, glaciers, dunes, indigenous cultures and an increasing economy.

The main aim of this book is to contribute to the understanding of the environment in Chile. The first chapter focuses on understanding an important dimension of nature, describing the Chilean forests as one of the main natural patrimonies of the country. Then the human enforcement of conservation biodiversity and natural patrimony is presented. Topics such as plastic pollution in oceans, the role of the school education system, private protected areas and others are addressed. The book focuses on the potential impacts generated by climate change on the environment of Chile. Alternatives for sustainable development in the near future that take into account food security, soil erosion and climate change. The book finalizes with two issues which are strongly linked to human activities, natural hazards and mining impacts. A history of natural hazards in Chile is presented, analyzing the changes in policy and the influence of socio-environmental events and dynamics on the current structure of risks in Chile determined by natural and human factors. Finally, an analysis of the impacts of mining associated with arsenic and copper is presented, describing the development of environmental standards, which aim to avoid or reduce the impacts on nature and humans.

Oman in the 21st Century: Issues and Challenges
Ahmed Nawaz Hakro, Ph.D. (Professor of Economics and Associate Dean for Research and Innovation, Middle East College, Knowledge Oasis Muscat, Sultanate of Oman)

In series: Politics and Economics of the Middle East
2019.

The Sultanate of Oman is known for its internal peace, tranquility and political harmony. The country has long been a success story of growth and development in the region. The past few decades of development have not only brought about developmental transformation but have also improved the governance, standards of living and prosperity of its population. However, the recent economic globalization and technological changes have posed a number of challenges for the depleting resources of the Sultanate of Oman. Policy makers are compelled to confront these challenges by adopting the traditional development paths and striving to diversify the economy in an attempt to wean the country from its dependence on natural resources. The earlier development trajectory of the country was based on state-led development models with an important role being envisaged for the public sector. However, the diversification strategies that have been adopted recently are based on the proactive role of the private sector. These include creating an enabling business environment, attracting direct foreign investment and increasing the investment on human capital. The development vision is largely focused on strengthening the tourism, logistics and infrastructure sectors to create job opportunities for the fast growing young and educated population. The development of human capital is also a key challenge which needs to be addressed to reduce knowledge and educational deficits; the country’s labour market imbalances in terms of mismatch of skills needs to be corrected through the policies of Omanization of its national work force. The country is facing new set of regional peace and security challenges in changing regional political dynamics. This book contains original research contributions which largely address these issues and challenges in recent times. The researchers have traced the development and diversification paths in Oman’s historical context including the investigation of trade patterns, energy and water consumption uses and the socio-economic impact of trade with the rest of the world. Key issues of Omani culture and identity, peace and security that are linked to the preservation of the Omani national heritage and language identity are also explored. The book has explored the developmental trajectories in recent decades with its limitations and has provided in detail the answers to the use of scarce resources such as oil, gas, water and energy resources, their consumption patterns, as well as the impact of climate change in these changing and uncertain economic times. The book has also addressed the Arabic language issue and the Omani and other dialects which are very important to the Omani identity. The book debates the factors that have contributed to the growth as well as threatened the very survival of Omani dialects. The book has further investigated the significant performance challenges to Omani SMEs. The challenges of development and diversification and the barriers to diversification efforts, the composition and direction of trade flows, peace and security
and the trading patterns of Oman and its attendant complexities are also discussed. The book is an original narration of the developmental and transformational journey Oman has taken to maintain inclusive development, diversification and high standards of living in this unpredictable economic climate.

**Turkish Prisoners in Egypt**
*Coralie Sacré*

In series: *The Middle East in Turmoil* 2018.
Softcover: 978-1-53613-790-3. $82.00.
e-book: 978-1-53613-791-0. $82.00.
This book describes the observations of the Red Cross International Committee who visited the camps of the Turkish Prisoners of War in Egypt on December 3rd 1916. Specifically, the report gives an account of the Heliopolis Camp (holding a total population of 15,000 men), including the prisoners’ accommodations, bedding, exercise, food, clothing, hygiene, the medical attention they received, the work of the prisoners’, if any, religion and recreations, their correspondences, and behavior. It also includes their observations on the Hospital at Abbassiah, near Cairo, which Prisoners' were taken to, as well as the Maadi Camp (all prisoners were taken there after capture), and the condition and similar information on other camps of the Turkish Prisoners in Egypt.

**U.S. History**

**America and the World War**
*Theodore Roosevelt*

Hardcover: 978-1-53615-513-6. $160.00.
This book which was originally published in 1915 is a window into the world of a century ago, when Woodrow Wilson was wondering whether or not America should enter WWI. Former president Theodore Roosevelt lays out the moral and political case for coming to the aid of our European allies. This book demonstrates that America's issues are relatively unchanged even after one the most changing centuries in the history of mankind.

*George Barton*

Hardcover: 978-1-53614-918-0. $230.00.
The object of this volume is to present in as consecutive and comprehensive form as possible the history of the Catholic Sisterhoods in the late Civil War. Many books have been written on the work of other women in this war, but, aside from fugitive newspaper paragraphs, nothing has ever been published concerning the self-sacrificing labors of these Sisterhoods. Whatever may have been the cause of this neglect or indifference, it is evident that the time has arrived to fill this important gap in the literature of the war.

**Cold War: Global Impact and Lessons Learned**
*Allison L. Palmadessa, PhD (Associate Professor of History, Coordinator of Social Studies Licensure, School of Humanities, Greensboro College, Greensboro, NC, US)*

In series: *Political Science and History* 2019. 272 pp.
This interdisciplinary text takes into account the impact of the Cold War on various locales, groups, societies, organizations, and technology. Included in this work are chapters on education, political groups, cultural challenges and rivalries, nuclear technology and weaponry, the impact of nuclear exposure, and the new global order in a post-nuclear age. Edited by an historian, each chapter is written from multiple disciplinary perspectives — — political science, history, social science, science, and medicine — — making this work exceptionally unique with broad sweeping conceptual frameworks, methods, and points of analysis, all the while focused upon a four- decade era of fear. The work of Stivachtis and Manning offer an engaging look into the organization of the international community, world affairs, and inter-cultural challenges during the Cold War to understand the impact on global society through the lens of the English School of International Relations. Cimbala’s chapter delves into the challenges to controlling and understanding nuclear warfare throughout the
Cold War and how the knowledge of control or preventing catastrophic nuclear war in the historic period is significantly different from the current nuclear age, from the perspectives of what nations have weapons, of what magnitude, and the potential for warfare. The impact of nuclear exposure well after the Cold War is examined in Osono’s work, which analyzes the physiological and neurological impact of nuclear waste on workers in China who unknowingly unearthed barrels of nuclear waste. Nekola offers readers a view into the role of the exiled Czech political parties that operated in outside of the regulations of the Iron Curtain, after the 1948 Communist Coup, maintaining party publications and organization throughout the 1950s. The work of Bar-Noi analyzes the relationship between the Israeli and Soviet governments as the nation of Israel was founded and ultimately placed in the political cross-hairs of world leaders from 1945 to 1967. Palmadessa’s works on U.S. education — k-12 compulsory and higher education — considers the ways in which education responded to the call for patriotic support of the U.S. in opposition to the communist regime in Russia and the understanding of the global role education was to play. The Cold War shook the world, its institutions, cultural groups, and scientific communities to their core. The Cold War: Global Impacts and Lessons Learned offers readers insight into the immediate challenges, the continued obstacles, and the knowledge gained from this tumultuous period riddled with fear that dominates the narrative of 20th century world history.

**Complete Life of William McKinley and Story of His Assassination: An Authentic and Official Memorial Edition, Containing Every Incident in the Career of the Immortal Statesman, Soldier, Orator and Patriot**

*Marshall Everett*

In *series: Historical Figures*


Hardcover: 978-1-53615-721-5. $230.00.

On Friday, September 6, 1901, the American people were shocked and stunned by the news that their beloved President, William McKinley, had been shot down by a cowardly assassin, while attending the Pan-American Exposition at Buffalo. This book is a detailed account of the events surrounding the assassination as well as other important events in the life of William McKinley.

**Daniel Boone: The Pioneer of Kentucky**

*John S. C. Abbott*

In *series: Historical Figures*


Hardcover: 978-1-53616-030-7. $160.00.

The name of Daniel Boone is a conspicuous one in the annals of our country. And yet there are but few who are familiar with the events of his wonderful career, or who have formed a correct estimate of the character of the man. Many suppose that he was a rough, coarse backwoodsman, almost as savage as the bears he pursued in the chase, or the Indians whose terrors he so perseveringly braved. Instead of this, he was one of the most mild and unboastful of men. He was truly one of nature’s gentle men. This narrative reveals a state of society and habits of life during the founding of the Republic.

**David Crockett: His Life and Adventures**

*John S. C. Abbott*

In *series: Historical Figures*


Hardcover: 978-1-53615-938-7. $160.00.

David Crockett certainly was not a model man. But he was a representative man. He has exerted a very powerful influence over our history. His wild and wondrous life is worthy of the study of every patriot.

**European Background of American History**

*Edward Potts Cheyney*

In *series: American History, Culture and Literature*


Hardcover: 978-1-53616-072-7. $195.00.

The history of America is a branch of that of Europe. The discovery, exploration, and settlement of the New World were results of European movements, and sprang from economic and political needs, development of enterprise, and increase of knowledge, in the Old World. The fifteenth century was a period of extension of geographical knowledge, of which the discovery of America was a part; the sixteenth century was a time of preparation, during which European events were taking place which were of the first importance to America, even though none of the colonies which were to make up the United States were yet in existence. From the time of the settlement forward, the only population of America that has
counted in history has been of European origin. The institutions that characterize the New World are fundamentally those of Europe.

**Familiar Letters of John Adams and His Wife Abigail Adams During the Revolution with a Memoir of Mrs. Adams**  
*John Adams, Abigail Adams and Charles Francis Adams*  
In series: *Historical Figures*  
e-book: 978-1-53615-742-0. $230.00.

This book contains a collection of letters between John and Abigail Adams. The letters not only reveal the depth of their relationship but also detail the sacrifices, the deprivations, and the emotions of war and separation in a personal, unguarded way. The balance of the masculine and feminine perspectives makes this book particularly interesting and unique.

**George Washington or Life in America One Hundred Years Ago**  
*John S. C. Abbott*  
In series: *Historical Figures*  
Hardcover: 978-1-53616-032-1. $160.00.  

The life of Washington reveals to us the state of society in our land, the manners and customs of the people, their joys and griefs, one hundred years ago. As a statesman, as a general, as a thoroughly good man, he stands pre-eminent. He was so emphatically the Father of his country that it may almost be said that he created the Republic.

**Many Strides to Freedom: African American Women’s Unsung Contributions and Legacies**  
*Janelle Carter-Robinson, Ph.D. (Alabama A&M University, Huntsville, AL, US)*  
In series: *African American Women*  
Edited by: *Charnetta Gadling-Cole (Department of Social Work, Psychology and Counseling, Director, Center for Global Social Service Research, Alabama A&M University of Huntsville, Alabama, USA)*  
Softcover: 978-1-53615-055-1. $82.00.  
e-book: 978-1-53615-056-8. $82.00.

“To struggle and battle and overcome and absolutely defeat every force designed against us is the only way to achieve.”- Nannie Helen Burroughs African American women have been integral to the various fights for equality throughout American history. Their importance to the movement occurred long before lifelong activist Rosa Parks became the catalyst in the Montgomery Bus Boycott in 1955. Who are the countless and often nameless black women who risked their lives and worked tirelessly to fight for the equality of black people in this country? From slavery to the modern day civil rights movement, the contributions of African American women are often overlooked in the retelling of history, but their contributions were critical in the battle for racial equality. They were grassroots organizers, strategists, and educators. Due to their selflessness and kindness, these black women became heroines of the movement. This book seeks to unearth the contributions of African American women throughout various periods of American history.

**Recollections and Letters of General Robert E. Lee**  
*Captain Robert E. Lee*  
In series: *American History, Culture and Literature*  
Hardcover: 978-1-53615-466-5. $270.00.  

General Robert E. Lee is best known as the commander of the Confederate Army during the Civil War. Lee was also a prolific writer, seemingly writing almost every day of his life. Recollections and Letters of General Robert E. Lee contains letters that General Lee wrote to family and friends with comments and background by his son, Robert. Through his letters and his son’s commentary, the varying facets of Lee’s character are revealed.
Signers of the Declaration: Historic Places Commemorating the Signing of the Declaration of Independence

Robert G. Ferris

In series: Historical Figures
Hardcover: 978-1-53616-034-5. $230.00.
This book incorporates a comprehensive survey of sites and buildings associated with the signers of the Declaration of Independence. The book highlights the sites where freedom was forged and our founding fathers actually made the decisions which have stood the severest tests of time. With the assistance of this book, many more people may come to know the sites and structures frequented by the signers of the Declaration, to visit them personally, and to appreciate more deeply the importance of their preservation.

The American Revolution. Volume I

John Fiske

In series: American History, Culture and Literature
This 2 part history of the American Revolution was written right after the Civil War. The author’s insight into not only what was happening in the United States but also to all that was occurring in Great Britain makes this book as relevant today as when it was first written.

The American Revolution. Volume II

John Fiske

In series: American History, Culture and Literature
Hardcover: 978-1-53615-026-1. $230.00.
This 2 part history of the American Revolution was written right after the Civil War. The author’s insight into not only what was happening in the United States but also to all that was occurring in Great Britain makes this book as relevant today as when it was first written.

The Chicago Massacre of 1812

Joseph Kirkland

In series: American History, Culture and Literature
Hardcover: 978-1-53616-197-7. $160.00.
History is not a snap-shot. Events happen, and the true record of them follows at a distance. Sometimes the early report is too voluminous, and it takes time to reduce it to truth by a winnowing process that divides chaff from grain. This has been the case regarding every great modern battle. Sometimes, on the other hand, the event was obscure and became important through the rise of other, later conditions; in which case, instead of winnowing, the historian sets himself to gleaning the field and making his grist out of scattered bits of its fruitage. This has been the case regarding the Chicago massacre of 1812.

The German Secret Service in America 1914-1918

John Price Jones and Paul Merrick Hollister

In series: Political Science and History
A nation at war wants nothing less than complete information of her enemy. It is hard for the mind to conceive exactly what “complete information” means, for it includes every fact which may contain the lightest indication of the enemy strength, her use of that strength, and her intention. The nation which sets out to obtain complete information of her enemy must pry into every neglected corner, fish every innocent pool, and collect a mass of matter concerning the industrial, social and military organization of the enemy which when correlated, appraises her strength—and her weakness. Nothing less than full information will satisfy the mathematical maker of war.
The Secret of Success: The Link between American Prosperity Theology and Business Self-Help Literature

Dawn L. Hutchinson (Christopher Newport University, Newport News, VA, US)

In series: American History, Culture and Literature

2020.

This book links American prosperity literature and business self-help literature in an effort to uncover their connections to concepts of success in American culture. This pattern entails visualizing a goal, expecting/believing that the goal can/will be achieved, declaring one’s intention to achieve the goal, and finally, “realize”/achieve the goal. While the definitions of “success” vary, the general meaning has to do with setting goals and achieving them. In this book, the author describes various threads of prosperity theology and demonstrates their connection to concepts of business success. The goal of this book is to show how this literature began in religious contexts, including metaphorical and evangelical religions, the methods of achieving success became part of the fabric of American culture as a whole. Prosperity theology connects the visualization and declaration process with God and the individual’s relationship to God. Since business interests are intertwined with notions of success, much of American business literature echoes the methods originally begun with prosperity theology. This book is an attempt to map some of those trends and to demonstrate the complicated nature of their origins.

The Women of the American Revolution

Elizabeth F. Ellet

In series: Historical Figures


When Elizabeth F. Ellet compiled her history of “The Women of the Revolution,” she could not have foreseen the deep interest in Colonial and Revolutionary history, that was destined to mark the last decade of the Nineteenth Century, nor could she have realized that the various patriotic societies that were to be organized among women, would lead to as great an interest in the lives of the mothers as in those of the fathers of the Republic. Yet the writer of these sketches of noted women has prepared for just such a phase of American life, which makes her work now appear a prophecy.

History and Collective Memory from the Margins: A Global Perspective

Sahana Mukherjee, Ph.D. (Assistant Professor of Psychology, Gettysburg College, Gettysburg, PA, US), and Phia S. Salter, Ph.D. (Africana Studies Program, Program Coordinator, Associate Professor of Psychology and Africana Studies, Ray A. Rothrock ‘77 Fellow, Texas A&M University, MS, and College Station, TX, US)

In series: Cultural Studies in the Third Millennium

2019.

This edited volume brings together interdisciplinary research from diverse fields such as psychology, history, education, and cultural studies to examine the interconnections between collective memory, history, and identity. With research and theoretical examples from around the world, this volume presents both majority and minority, powerful and marginalized perspectives on national representations of history and their various identity-relevant antecedents, meanings, and consequences. Several contributions in this volume highlight the tension between engaging conflicted and negative histories with understanding the nation and the self in the present while other contributions extend this conversation to consider the impact of conflicted histories on future generations. The volume is organized into four parts. Part I highlights emerging theoretical discussions of remembering the past from social identity, intergroup emotion, and sociocultural perspectives. Parts II and III both highlight the bi-directional relationship between how people from various dominant and marginalized groups represent the nation and the consequences for contemporary intergroup relations. These sections highlight how national narratives shape our ideas of who we are, collectively, and how motivations and contemporary identity concerns shape how people engage with the past. To conclude, the book wraps up by discussing intergenerational patterns of collective memory in Part IV. Together, the contributions offer insight into how and why historical events can influence our identity, emotions, relationships, and our motivations to engage with the past.
It would be difficult to find, in all the range of the past, a man whose career has been so full of wonderful and exciting vicissitude as that of Louis Philippe. His life covers the most eventful period in French history. The storms of 1789 consigned his father to the guillotine, his mother and brothers to imprisonment, and himself and sister to poverty and exile. There are few romances more replete with pensive interest than the wanderings of Louis Philippe to escape the bloodhounds of the Revolution far away amidst the ices of Northern Europe, to the huts of the Laplanders, and again through the almost unbroken wilds of North America, taking refuge in the wigwams of the Indians, and floating with his two brothers in a boat a distance of nearly two thousand miles through the solemn solitudes of the Ohio and the Mississippi from Pittsburg to the Gulf.

In preparing this volume it was the author’s aim to omit as few important events as possible without making the book a mere enumeration of names and dates. Above all, he tried to be accurate. The Constitution of Norway, the most liberal Constitution of Europe, appeared to be an appropriate closing chapter in a History of Norway.

The romance of war in its most thrilling form is exemplified in this narrative of the adventures of “The World’s Greatest Military Spies and Secret Service Agents.” Much has been published upon the subject of espionage, and the memoirs and secret histories of the courts of Europe give us instances of men and women who have gained favor and money, if not honor and glory, by selling back-stairs gossip concerning their fellow creatures; but the aim of the present work has been rather to relate the big exploits of those who faced great personal danger and risked their lives for the sake of flag and country.

Linguistics

Encyclopedia of Linguistics (7 Volume Set)
Marilynn Shari Firmin
In series: Languages and Linguistics
Hardcover: 978-1-53614-359-1. $1350.00.
This 7 volume encyclopedia set presents important research on linguistics. Some of the topics discussed herein include speech and language disorders, language development, American Sign Language, voice therapy, and aphasia.

Studies and Exercises in Formal Logic
John Neville Keynes
In series: Languages and Linguistics
e-book: 978-1-53616-196-0. $230.00.
In addition to a somewhat detailed exposition of certain portions of what may be called the book-work of formal logic, the following pages contain a number of problems worked out in detail and unsolved problems, by means of which the student may test his command over logical processes. In the expository portions of Parts I, II, and III, dealing respectively with terms, propositions, and syllogisms, the traditional lines are in the main followed, though with certain modifications; e.g., in the systematisation of immediate inferences, and in several points of detail in connexion with the syllogism. For
purposes of illustration Euler’s diagrams are employed to a greater extent than is usual in English manuals. In Part IV, which contains a generalisation of logical processes in their application to complex inferences, a somewhat new departure is taken. So far as I am aware this part constitutes the first systematic attempt that has been made to deal with formal reasonings of the most complicated character without the aid of mathematical or other symbols of operation, and without abandoning the ordinary non-equational or predicative form of proposition. This attempt has on the whole met with greater success than I had anticipated; and I believe that the methods formulated will be found to be both as easy and as effective as the symbolical methods of Boole and his followers. The book concludes with a general and sure method of solution of what Professor Jevons called the inverse problem, and which he himself seemed to regard as soluble only by a series of guesses.

Using Alternative Assessment to Improve EFL Learners’ Learning Achievement: From Theory to Practice
Hoang Yen Phuong, Ph.D. (School of Foreign Languages, Can Tho University, Can Tho City, Vietnam) and Thi Van Su Nguyen, Ph.D
In series: Education in a Competitive and Globalizing World
In series: Languages and Linguistics
Softcover: 978-1-53615-161-9. $95.00.
e-book: 978-1-53615-162-6. $95.00.
This book is an effort to review the theoretical framework for the use of alternative assessment in EFL contexts and provides a collection of empirical research on alternative assessment for different groups of EFL learners in various classrooms. The aim of the book is not to simply review the past literature on alternative assessment in EFL, rather it aims to evaluate current language policy reforms, in which opportunities for alternative assessment are incorporated. Recent developments and possibilities for alternative assessment implementation in specific language skills are encouraged. The book provides empirical findings specific to certain sub-skills using alternative assessment strategies in EFL. Both the theoretical framework, and the insights and implications from the empirical research described in the book will make alternative assessment more accessible to language teachers in the most relevant and practical way.

A History of Roman Classical Literature
R. W. Browne
In series: Fine Arts, Music and Literature
The history of Roman Classical Literature, although it comprehends the names of many illustrious writers and many voluminous works, is, chronologically speaking, contained within narrow limits. Dating from its earliest infancy, until the epoch when it ceased to deserve the title of classical, its existence occupies a period of less than four centuries.

A Manual of American Literature
Theodore Stanton
In series: Fine Arts, Music and Literature
e-book: 978-1-53616-071-0. $230.00.
This book has been made a Memorial Volume out of compliment to American literature and is dedicated, with his permission, to President Roosevelt. This book presents an interesting evidence of the growth of the popularity of American literature in Europe and strives to show the high appreciation for American authors.
Memoirs of the Reign of King George the Second. Volume 1
Author: Horace Walpole
Editor: Henry Richard Vassall Holland
In series: Historical Figures
Memoirs of the Reign of King George the Second is printed from a Manuscript of the late Horace Walpole, Earl of Orford. Among the papers found at Strawberry Hill, after the death of Lord Orford, was the following Memorandum, wrapped in an envelope, on which was written, “Not to be opened till after my Will.” Opening the box, it was found to contain a number of manuscript volumes and other papers, among which were these Memoirs.

Memoirs of the Reign of King George the Second. Volume 2
Author: Horace Walpole
Editor: Henry Richard Vassall Holland
In series: Historical Figures
Hardcover: 978-1-53615-824-3. $195.00.
e-book: 978-1-53615-825-0. $195.00.
Memoirs of the Reign of King George the Second is printed from a Manuscript of the late Horace Walpole, Earl of Orford. Among the papers found at Strawberry Hill, after the death of Lord Orford, was the following Memorandum, wrapped in an envelope, on which was written, “Not to be opened till after my Will.” Opening the box, it was found to contain a number of manuscript volumes and other papers, among which were these Memoirs.

Memoirs of the Reign of King George the Second. Volume 3
Author: Horace Walpole
Editor: Henry Richard Vassall Holland
In series: Historical Figures
Hardcover: 978-1-53615-926-4. $160.00.
Memoirs of the Reign of King George the Second is printed from a Manuscript of the late Horace Walpole, Earl of Orford. Among the papers found at Strawberry Hill, after the death of Lord Orford, was the following Memorandum, wrapped in an envelope, on which was written, “Not to be opened till after my Will.” Opening the box, it was found to contain a number of manuscript volumes and other papers, among which were these Memoirs.

Poetry: Interpretations and Influence on the World
Vivian Norton
In series: Fine Arts, Music and Literature
Softcover: 978-1-53615-433-7. $82.00.
e-book: 978-1-53615-434-4. $82.00.
The opening chapter of Poetry: Interpretations and Influence on the World tries to explain the correlation between history and poetry, as well as and the elements that currently aid in the recognizance of the presence of the poetic in the work of historians. Following this, the authors discuss six poems from the poetry collection Charred Tree (1945) and three poems from the collection Shadowland (1966), both published by Estonian writer Bernard Kangro (1910–1994) while in exile. These autobiographical poems are interpreted as a testimony, not only to the author’s personal experiences in World War II, but also to those of other Estonian refugees. This compilation also compares the nonsensical narrative of Lewis Carroll to the poetry of Hebrew poet Dalia Hertz, as both writers seek to establish a unique and differentiated poetic logic. Dalia Hertz’s first book, Margot (published in 1961) follows a logic that diverges from common sense. As such, the authors argue that a key aspect of her poetry is the logic of mirroring antinomy; one of the central themes of Through the Looking Glass. The authors go on to assess that although significant state affairs weighed heavily on Sultan Süleyman’s mind as he had to deal with conflicts with other states, lead armies in battles and attend to power struggles in the court, he still found time to compose thousands of poems. The concluding chapter postulates that through the use of poetry and figurative language in children’s biographical picture books, readers can enter the world of women scientists who forged the path of scientific discovery and innovation. Reading and listening to biographical accounts of people who have advanced science, influenced our worldview, and changed our understanding of how we engage in our everyday lives can inspire children and lead them toward a more in-depth understanding of scientific inquiry.
Dao and Daoist Ideas for Scientists, Humanists and Practitioners
E. Yueh-Ting Lee (Professor of Psychology Department, Southern Illinois University, Carbondale, IL, US)
In series: World Philosophy
2020.
In this new collection of previously unpublished papers, Daoism is a philosophy, and it is presented not exclusively as a religion but as a practical way of life related to all aspects of human beings and the natural environment. Since its origins in China thousands of years ago, Daoism has meant harmony with nature and other human beings. Its principles may be applied successfully by those with any or no religion who seek a world of greater understanding, harmony, and peace. Addressed to a broad audience ranging from newcomers to seasoned professionals, this book introduces the concepts of Dao, Daoism, and its pioneering philosophers (e.g., Laozi, Zhuangzi, and Liezi). The book describes the importance of Dao and Daoist ideas for scientists, humanists, and practitioners while offering practical steps and guidance for our lives today. Like the familiar taiji (also known as tai chi) symbol associated with Daoism, this book is divided into two complementary sections. The first explores how Dao and Daoist ideas are related to science, humanities, and the arts. The second part focuses on Daoist practices and applications. The essays, written by experts in their fields of study, address a number of topics, including the Dao of sciences (e.g., statistics) and arts, similarities between natural Dao and Darwin’s evolutionary science, and Daoist contribution to sciences and technology. Other subjects include the growing interest in Daoist ideas in the West, Daoist cognitive science and the yin-yang dialectical mind, Daoism’s relationship to peace psychology and ecology psychology (via self-observation and self-understanding), and Zhuangzhou’s aesthetic view on the naturalness of things (i.e., the most beautiful entities are those that are naturally created by the Dao). In addition to these theoretical explorations, the book offers abundant practical applications of Daoist ideas to our lives and work. Practical guidance is offered in applying Daoist principles to physical and mental health, meditation and dantian cultivation, classroom learning, and diversity management. Clear-cut directions offer insight into applying Daoist ideas to leadership training, clinical therapy, and administration. The book provides readers with the universal applicability of Daoist principles and the benefit of living in harmony with nature, Dao, and others. This book is unique in its appeal to a wide range of readers. On the one hand, it provides an introduction for those with minimal knowledge of Daoism. On the other hand, sophisticated Daoist scholars, researchers, or practitioners may also be enriched and enlightened by its presentation of recent research findings, scholarly discussions, and hands-on applications. Years in the making, this book project represents a milestone of overdue compendium of Daoist wisdom, from basic information to tools for transformation in the 21st century. Happy reading!
of mind presupposes a responsibility of a subject in relation to several types of objects. The two of these epistemic
place with help of the sound weight of articulated reasonable concepts based on formal and material reality. Kant’s
experience and facts had no substance at all of thought. If fanciful aspirations of ideas happen to take off from the objective ground irresponsibly
pointing locations insisted in the depiction of the task of thinking not only as a concrete one depending on facts
were lost in search for the North in What Does It Mean To Orient Oneself In Thinking?(1786), Kant’s critical philosophy
or better with the picture of the wandering unconcerned under the celestial an
thin air and pretending to avoid— or surf— any resistance, like the figure of the dove in the Critique of Pure Reason (1781); or better with the picture of the wandering unconcerned under the celestial and immeasurable vault only to discover we
were lost in search for the North in What Does It Mean To Orient Oneself In Thinking?(1786), Kant’s critical philosophy
insisted in the depiction of the task of thinking not only as a concrete one depending on facts and experience gathered—
pinpoint locations—, but also as a matter of orientation depending on the necessity of categories—criteria, cardinal points—
of thought. If fanciful aspirations of ideas happen to take off from the objective ground irresponsibly—as if empirical
experience and facts had no substance at all— it is with good reason that due operations of counterbalance should be taking
place with help of the sound weight of articulated reasonable concepts based on formal and material reality. Kant’s theory
of mind presumes a responsibility of a subject in relation to several types of objects. The two of these epistemic

The Natural Law Tradition and Belief: Naturalism, Theism, and Religion in Dialogue
David Ardagh (Former Associate Professor, University of San Francisco, CA, US)
In series: World Philosophy
Hardcover: 978-1-53614-963-0. $195.00.
For over twenty centuries, from ancient Greece the ideal of natural law has been
appealed to in Western moral and legal philosophy as a grounding for ethics and
jurisprudence, centered on capacities of a common “human nature”. From the early
critical advent of “Christendom”, it was embedded within theistic and religious
systems for over a millennium, during which time it was treated as incomplete and part
of an enveloping divine law of ethics. Modern agnosticism in theology, religion, and
metaphysics then saw natural law unhitched from these associations, but it is still
suspect due to its lingering ties with these disciplines and practices. It endured through its meta-ethical capacity to integrate
changes in science with ethics via its central notion of wellbeing as the perfection of human nature, via access to “the
highest good”, however variously understood. Today, nature and human nature’s wellbeing, are both endangered.
Ecological destruction arising from unbridled growth, industrial pollution, nuclear weapons and mass population
displacement though poverty and wars threaten humanity. But in terms of the meta-ethics of wellbeing, both the humanist
normative ethics of natural law, and some of its enveloping theistic and religious divine law addenda, can be invoked to
address such evils. The book aims to reinvigorate natural law as a unifying ethical organon for this purpose, showing that it
can dialogue with its enveloping divine law “overlays” constructively, uncovering its points of essential unity with them,
and generating some unified solutions to the global threats mentioned, like poverty. These are largely due to global
injustices like tax evasion, the arms trade, and political corruption, which are better prevented by cooperatively agreed and
enforced global ideals, norms, and laws, based on natural and divine law, grounding international laws rather than
appealing to national norms and laws alone.

The Philosophy of Kant
Ricardo Gutiérrez Aguilar (Universidad Complutense de Madrid, UCM, Spain)
In series: World Philosophy
Illustrations and examples have always been deemed rare in the otherwise abundant
materials Kant sent to be printed. In this sense, tradition has made out of the
Königsberg’s philosopher a rather arid writer. He himself advocated for the perks of a
proper scholastic method in presenting arguments. It is thus a common place among
scholars that Herr Professor valued discursive clarity over any whimsical rhetorical
garments the popular thinker could have been tempted to wield in defense of his surely
more than dubious reasons. But even with that in mind, in Kant’s writings there is this
persistent and everlasting metaphor regarding the activity of navigation. A metaphor
going all through the Kantian philosophical enterprise: either in the form of sailing the

Encyclopedia of Philosophy (2 Volume Set)
Charles Malone
In series: World Philosophy
Hardcover: 978-1-53614-555-7. $395.00.
This compilation presents importance research on philosophy. Some topics discussed herein include scepticism, corruption,
hope and belief, the conscious and unconscious mind and the soul.
extremes are intertwined and in need of each other. When it comes to orientation, leaning on some sort of inner compass, each of us would have both in regard to sensitivity, knowledge, and moral thinking which serves like a guide to the trip within all three domains, and even comes in handy to map them out. This collective volume is precisely devoted to the task of revisiting some landscapes of the Kantian thought-itinerary along the brave seas and deep into the thick forests of justified knowledge, principles of morals and judgement in aesthetics: through its pages this work has put together renowned scholars from very different traditions eager to circumnavigate again the issues and concerns of 18th Century Philosophy and the particular Kantian solution of a new branded type of metaphysical inquiry, one inquiry subject to intellectual global duties as well.

**The System of Nature. Volume 1**  
*Paul Henri Thiery (Baron D’Holbach)*  
In series: World Philosophy  
2019.  
Hardcover: 978-1-53616-357-5. $230.00.  
The System of Nature is a 2 volume book on philosophy written by Paul-Henri Thiry in 1770 and published in French. Most importantly, the author denies the existence of God, arguing that belief in a higher being is the product of fear, lack of understanding, and anthropomorphism. It is the most comprehensive description of Atheism in the history of philosophy.

**The System of Nature. Volume 2**  
*Paul Henri Thiery (Baron D’Holbach)*  
In series: World Philosophy  
2019.  
The System of Nature is a 2 volume book on philosophy written by Paul-Henri Thiry in 1770 and published in French. Most importantly, the author denies the existence of God, arguing that belief in a higher being is the product of fear, lack of understanding, and anthropomorphism. It is the most comprehensive description of Atheism in the history of philosophy.

**Religion**

**An Examination of Religiosity: Influences, Perspectives and Health Implications**  
*Marcelo Saad, MD, PhD (Current President of the Spiritist Medical Association, São Paulo (SP), Brazil) and Roberta de Medeiros, MD, PhD (São Paulo (SP), Brazil)*  
In series: Religion and Spirituality  
The opening chapter of this compilation is dedicated to the quantification of selenium and platinum in blood serum by electrothermal atomic absorption spectrometry. While selenium is an essential trace element in many selenoproteins, platinum is found in the human body as a consequence of chemotherapy treatment after the administration of Pt-based drugs. For these reasons, their reliable quantification is extremely important. The authors go on to discuss how the early diagnosis of neurodegenerative diseases is important for more efficient treatment and prophylaxis. Currently, the dominant hypothesis of the pathogenesis of Alzheimer’s disease is amyloid cascade resulting in accumulation of amyloid-β in brain structures. In conclusion, the authors discuss the major barrier to a widespread use of blood serum eye drops represented by the lack of standardized processes for the preparation, conservation, and dispensation of the products. Future perspectives of homologous serum eye drops include the introduction of tailored eye drops screened for the desired content of growth factors for each patient and ocular surface disease.
Religious Education: Perspectives, Teaching Strategies and Challenges
Richard Coudert

In series: Religion and Society

Religious Education: Perspectives, Teaching Strategies and Challenges attempts to conceptualize the depth and complexity of religious education through Michael Polanyi's notions of personal knowledge and the tacit dimension of knowledge. In Israel, some non-religious Jewish families enroll their children in kindergartens of the state religious education system, even though they do not belong to the mainstream religious community. The authors offer an ethnographic study of the sociological-educational processes taking place in these kindergartens. The closing chapter discusses the possibilities for learning from Christian spirituality in the framework of a post-modern European university.

Christianity

Missionary Sheroes of the 19th to 21st Centuries
Michael J. Dochniak (Coralville, IA, USA)

In series: Religion and Society
Softcover: 978-1-53615-312-5. $95.00.
e-book: 978-1-53615-328-6. $95.00.

Missionary women are no strangers to the ecstasies, horrors, and humor of the human condition. June M. Dunn, RN-MSN was the 20th-century missionary in Haiti, Honduras, Guam, Russia, Saigon, Saipan, and Thailand. Her American family upbringing, science-based healthcare training, and humanistic effort allowed her to be an exemplary teacher and caregiver to the poverty-stricken. Her recollections offer inspiring, frightening, and sometimes comical aspects of missionary work. Select quotations and hymns give meaning to the spiritual and emotional impact of her calling. Personal photographs and paintings beautifully illustrate a life well-spent. In the final chapters, chronicled are five not-to-be-forgotten missionary women: Charlotte Moon; Mary Slessor; Amy Carmichael; Gladys Aylward; and Mother Teresa. These six heroic women (i.e., sheroes) and their missionary achievements are a testament to living for His glory with love and self-sacrifice.

The History of Christianity
John S. C. Abbott

In series: Religion and Spirituality

It has long seemed very desirable that a brief, comprehensive, and readable narrative of the origin of Christianity, and of its struggles and triumphs, should be prepared and adapted to the masses of the people. This narrative consists of the life and teachings of Jesus of Nazareth; the adventures of Paul and the apostles; and the most interesting events in the progress of Christianity from the earliest period to the present time.

Islam

Development of Muslim Theology, Jurisprudence and Constitutional Theory
Duncan B. MacDonald

In series: Religion and Society

In human progress unity and complexity are the two correlatives forming together the great paradox. Life is manifold, but it is also one. So it is seldom possible, and still more seldom advisable, to divide a civilization into departments and to attempt to trace their separate developments; life nowhere can be cut in two with a hatchet. And this is emphatically true of the civilization of Islam. Its intellectual unity, for good and for evil, is its outstanding quality. It may have solved the problem of faith and science, as some hold; it may have crushed all thought which is not of faith, as many others hold. However that may be, its life and thought are a unity.
Sectarianism in Islam: Power, Tribalism, and Commercial Interests
In series: Religion and Society
Softcover: 978-1-53615-888-5, $95.00.
Drawing on historical evidence and the Islamic instructions, Sectarianism in Islam: Power, Tribalism and Commercial Interests provides readers with the knowledge needed to recognize that sectarianism is and has long been an effective instrument for manipulation, endorsed and utilized by powerful players. The book is a careful reflection on and exploration of a subject that has fundamentally changed the course of action for various political and ambitious actors. The book challenges readers to place events in their historical and social contexts, without ignoring the existing political maneuvers. Furthermore, it underscores the power of the mind in the rise of Islamic civilization. The author provides powerful arguments essential for understanding the interplay of various actors who have exploited sectarianism to enhance their positions and achieve their goals. Several evolutionary stages of sectarianism are identified. Though tribal conflicts took place before the inception of Islam, after the rise of Islam rivals projected themselves as religiously motivated. In recent years, two powerful players have espoused contradictory allegiances, which have further divided the Muslim world. The book, in fact, shows that the past and the present are alive and that they profoundly shape the memories of various communities today, and possibly for many decades to come. Sectarianism in Islam: Power, Tribalism and Commercial Interests challenges you to let go of common myths, assumptions and uninformed beliefs that have been treated as given facts. The book addresses certain difficulties and setbacks that are pressing social and political actors to shoulder their responsibilities in the face of misconstruction and destructive strategies that have led to tragic events. Indeed, the book is not only a relevant work of scholarship, but it is also a practical call to enhance civility in conduct and circumvent pointless conflicts.

Special Topics

A Life of Walt Whitman
Henry Bryan Binns
In series: Distinguished Men and Women of Science, Medicine and the Arts
Hardcover: 978-1-53615-739-0, $230.00.
This book makes no attempt to fill the place either of a critical study or a definitive biography. The author found it impossible to draw a real portrait of the man without attempting some interpretation of his books and the quotation from them of characteristic passages, for they are the record of his personal attitude towards the problems most intimately affecting his life. Whitman was a man of special and exceptional character.

Leading with Love
Cam Caldwell, PhD (University of Illinois Springfield, Illinois, US), and Verl Anderson, DBA (Dixie State University, Professor of Management, St. George, UT, US)
In series: Leadership in a Changing World
2019.
Hardcover: 978-1-53616-397-1, $195.00.
In today’s knowledge-, wisdom-, and information-based world, the challenge facing leaders and organizations is to be able to obtain employee commitment and to apply that dedication to constant improvement and change. In a world where technology is rapidly improving and knowledge is increasing exponentially in virtually every field, the ability to adapt and to innovate is essential to organization success and individual development. This book looks at continuous improvement at the individual, group, organizational, and societal levels and identifies commonalities and keys to success. It adopts a “transformative” perspective towards leadership, management philosophy, duties owed, and the obligation to constantly change. The authors/editors have written extensively about the need for leaders and organizations to refine their approach to change and improvement and this book combines their insights into one consolidated explanation.
Understanding Creativity: Past, Present and Future Perspectives
Roger L. Cuadra
In series: Expressive Arts Therapies
Softcover: 978-1-53616-052-9. $95.00.
e-book: 978-1-53616-053-6. $95.00.
Understanding Creativity: Past, Present and Future Perspectives explores the symbiotic relationship between culture and creativity, particularly exploring how resources and cultural values within a society can foster or hinder creativity. Next, this compilation proposes a new method for measuring product creativity with verification of its metric characteristics. This approach entails the construction of a creativity coefficient and a uniqueness coefficient, which are based on the assessment of the originality of the answers provided by respondents. The connection between objective indicators of creativity and its representation on the level of self-consciousness is also discussed by way of a new questionnaire for implicit theories of creativity that diagnoses four scales: originality, intelligence and personal potential, novelty and activity. The authors propose and demonstrate how a student must perceive that the ability to self-correct any discrepancies between actual and desired performance is possible and achievable in order to exhibit a positive response to feedback.

“Zones of in-between” are defined as organizational, social and physical spaces at school that have the potential to allow for something else than their ostensible purposes in teaching and teacher-pupil relations. Different types of presence, interactions and expressions occur when pupils have a pause from teaching and interact with other pupils. The final paper is a qualitative narrative examination of undergraduate students’ experiences in a fully online learning community, describing how a community of 90 students divided into three sections of 30 participated in a blended course for 12 weeks which used flipped classroom video podcasts, online discussion boards, and weekly synchronous Adobe Connect conferencing.

Spirituality

Spirituality: Past, Present and Future Perspectives
Clint Baldwin
In series: Religion and Spirituality
Hardcover: 978-1-53615-713-0. $160.00.
In Spirituality: Past, Present and Future Perspectives, the hermeneutic pluralism of religious and spiritual healing and its evangelical roots are studied by means of the conceptual systems of religious anthropology and medical anthropology. The next chapter analyzes the relationship between spirituality and psychological well-being. The authors focus on agnostics and undecided people who lie between theists as certain believers and atheists as certain non-believers. The authors also assess how spirituality in the African American community influences end-of-life care decisions. In his The Sea of Fertility tetralogy of novels, Japanese novelist Yukio Mishima outlines a philosophy of life and death that bears profoundly transgressive spiritual implications. This compilation discusses how, through his blending of Buddhist notions relating to reincarnation and the insubstantiality of all phenomena, Mishima constructs what amounts to a new spirituality committed to immanence. In the penultimate chapter, the concept of dark spirituality is discussed through what Francois Laruelle calls the “lointain”, an unnameable, ineffable “distance” without measure. This concept is then examined through Ronnie ‘Prince’ Billy’s musical work and how his song, “Black,” defines blackness in terms of irreducible alterity. Lastly, while Bhoothan accentuated upon land donation from a resource ownership perspective, Vasudhaiva Kutumbakam based land acquisition stresses upon land transfer from the stakeholder concept. Implications for research and practice are discussed in the closing chapter.

The Last Farewell Embrace: Spirituality, Near-Death Experiences, and Other Extraordinary Events among Nurses
Alejandro Parra, PhD (Instituto de Psicologia Paranormal, Inc. President, Buenos Aires, Argentina)
In series: Religion and Spirituality
Softcover: 978-1-53615-343-9. $95.00.
e-book: 978-1-53615-344-6. $95.00.
The author summarizes the conclusions of dozens of unexplained experiences, such as visions people have reported when they are about to die, near-death experiences, and patients who have recovered suddenly and completely from illnesses after a religious intervention. Nurses have also often had their own experiences in the hospital context, such as seeing apparitions, noting significant “coincidences,” seeing energy fields, lights, or “electric shocks” around or even emitted from a hospitalized patient. Other such experiences include observing anomalous behavior in animals, noticing the anomalous functioning of equipment or medical instruments, intuitively “knowing” the
nature of a patient’s illness, or when he or she will die, and having unexpected experiences in intensive care units, neonatology areas, or pediatric or neuropsychiatric services. Other nurses, who may not have had such experiences of their own, have heard about them from reliable sources who have told them about these events. Clearly, there are a large number of unusual experiences as reported by doctors, caregivers, and nurses, sometimes in relation to hospitalized patients. Although many professionals have themselves been witness to inexplicable events, very few efforts have been made to organize the narrations of these events in a rigorous and detailed manner. It is important that nurses, as well as physicians, be informed about how to respond to patients who have such experiences. This work, therefore, serves as a guide in the exploration of these impressive stories and extraordinary experiences that have come to light.

POLITICS

African Politics, Economics and Security

Africa: Current Issues, U.S. Relations and Ebola

Sven Mehler

In series: Political, Economic and Security Issues of Africa

Hardcover: 978-1-53615-820-5. $230.00.

This book is a compilation of reports on Africa.

Ethiopia: Social and Political Issues

Logan Cochrane (Global and International Studies, Carleton University, Ottawa, Canada and Institute of Policy and Development Research, Hawassa University, Hawassa, Ethiopia)

In series: Political, Economic and Security Issues of Africa

Hardcover: 978-1-53616-121-2. $230.00.

There have been significant social, economic and political changes in in Ethiopia in recent decades. Healthcare coverage has rapidly expanded but much progress is still needed; access to education has improved but there are questions of quality and employment; macro-economic growth has been amongst the highest in the world for over a decade but there are questions of rising inequality; infrastructure has expanded throughout the nation, often at the expense of some; the second largest safety net in Africa has received acclaim and criticism; foreign direct investment has been relatively strong, but the quality of employment opportunities is questionable; recent political transitions have changed a negative narrative more positive, but many questions about democracy and inclusion remain. Since the political changes of 2018, Ethiopia has been undergoing what may be its most rapid and drastic change in modern history. This edited volume presents diverse experiences, perspectives, geographies, and sectors in the social and political realms – specifically in the thematic areas of governance, health, gender and land. It highlights successes as well as challenges on a wide range of issues. The collection of research shows the complexity of the changes and challenges, and the diverse ways in which change is experienced.

Liberia in the Twenty-First Century: Issues and Perspectives

George Klay Kieh, Jr.(Department of Political Science, University of West Georgia, Maple Street, Carrollton, GA, US)

In series: Political, Economic and Security Issues of Africa


Since the founding of the Liberian state in 1847, the country has faced several frontier issues, such as ethnic pluralism and inclusion, the elusive quest for democracy, decentralization, and socio-economic development. Cumulatively, the failure by the various state managers to address these and other major challenges occasioned an enduring civil conflict that imploded into mass insurrection on April 14, 1979, a military coup d’état on April 12, 1980, and two civil wars from 1989-1997, and 1999-2003, respectively. Significantly, these major conflict events had profound ramifications,
including the deaths of thousands of people, massive internal displacement, refugee crises, the destruction of the already underdeveloped physical infrastructure and the productive sectors of the economy, and the collapse of governance. Against this background, this book explores some of these frontier issues—the travails of the peripheral state, ethnic pluralism and inclusion, the quest for democracy, decentralization and governance, the monocrop economy and its resulting implications for the crises of underdevelopment, public health, security sector reform, and post-conflict reconstruction—that have and continue to face Liberia in the twenty-first century. This book then makes policy-relevant recommendations for addressing these challenges, as the country strives to address its seemingly unending cycle of “missed opportunities” and “false starts.”

**American Government and Politics**

A Biography of the Signers of the Declaration of Independence, and of Washington and Patrick Henry: With an Appendix, Containing the Constitution of the United States and Other Documents

*L. Carroll Judson*

In series: *American History, Culture and Literature*


Hardcover: 978-1-53615-872-4. $230.00.

A Biography of the Signers of the Declaration of Independence contains biographies of individuals who wisely conceived, nobly planned and boldly achieved the independence of these United States. The character of each of the individuals who signed the declaration, and of the illustrious Washington and the bold Patrick Henry, is fully portrayed. The most prominent acts of their lives are also clearly exhibited.

A Closer Look at U.S. Territories

*Ethel Jones*

In series: *American Political, Economic, and Security Issues*

2020.


There are 14 U.S. territories, or possessions, five of which are inhabited: Puerto Rico (PR), Guam, U.S. Virgin Islands (USVI), American Samoa (AS), and the Commonwealth of the Northern Mariana Islands (CNMI). These inhabited territories, like U.S. states in some cases, borrow through financial markets. For each U.S. territory, Chapter 1 updates trends in public debt, its composition, and drivers; trends in revenue and its composition, and overall financial condition; and what is known about the ability to repay public debt. Each of these inhabited territories has a local tax system with features that help determine each territory’s local public finances. Chapter 2 summarizes U.S. tax policy related to the territories, including a general discussion of how federal taxes apply to territorial residents and how federal law affects the different territorial tax systems in similar or different ways. When the ICA was enacted in 1940, Congress determined that it would be problematically costly for the SEC to travel to and inspect investment companies located beyond the continental United States in U.S. territories, such as, Puerto Rico, Guam, and the U.S. Virgin Islands. As a result, mutual funds organized in those locales were exempted from the ICA and were not required to register with the SEC. As reported in Chapter 3, several legislative proposals would change this territorial exemption from the ICA. Participation in Medicaid is voluntary, though all states, the District of Columbia (DC), and the territories (i.e., American Samoa, Commonwealth of the Northern Mariana Islands (CNMI), Guam, Puerto Rico, and the U.S. Virgin Islands) choose to participate. The territories operate Medicaid programs under rules that differ from those applicable to the 50 states and DC. These rules are discussed in chapter 4. Chapter 5 describes the factors that contributed to Puerto Rico’s financial condition and levels of debt and federal actions that could address these factors. Small businesses play an important role in the U.S. and Puerto Rican economies. According to the U.S. Census Bureau, over 99 percent (about 44,000) of the businesses in Puerto Rico are small. Chapter 6 examined trends in small business contracting and the use of SBA programs in Puerto Rico that provide contracting preferences to small businesses and stakeholder views on any challenges that small businesses in Puerto Rico face in obtaining federal contracting opportunities. The United States took control of the Northern Mariana Islands from Japan during the latter part of World War II. The Commonwealth of the Northern Mariana Islands’ (CNMI) inflation-adjusted gross domestic product (GDP) has grown each year since 2012, according to the Bureau of Economic Analysis. Chapter 7 discusses recent trends in the CNMI economy and preliminary observations about the number of approved CW-1 permits and characteristics of permit holders, drawn from GAO’s ongoing work. The 1976 covenant defining the political relationship between the CNMI and the United States exempted the CNMI—a U.S. territory north of Guam—from certain federal immigration laws. Chapter 8 discusses DHS’s implementation of selected CNRA provisions regarding foreign workers, among others, in the CNMI and its discretionary parole authority under the INA as applied in the CNML GAO In September 2017, two major hurricanes—Irma and Maria—struck the USVI causing billions of dollars in damage to its infrastructure, housing, and economy. Chapter 9 describes the status of FEMA’s Public Assistance program funding provided to the USVI in response to the 2017 hurricanes as of October 1, 2018, and the USVI’s transition to implementing the Public Assistance alternative procedures in the territory. Chapter 10 provides an overview of economic and fiscal conditions in the U.S. Virgin Islands (USVI).
American Institutions
Alexis De Tocqueville
In series: American Political, Economic, and Security Issues
Hardcover: 978-1-53615-547-1. $230.00.

American Institutions by Alexis De Tocqueville has attracted great attention throughout Europe, where it is universally regarded as a sound, philosophical, impartial, and remarkably clear and distinct view of our political institutions, and of our manners, opinions, and habits, as influencing or influenced by those institutions. Writers, reviewers, and statesmen of all parties, have united in the highest commendations of its ability and integrity. The people, described by a work of such a character, should not be the only one in Christendom unacquainted with its contents. At least, so thought many of our most distinguished men, who have urged the publishers of this edition to reprint the work, and present it to the American public. They have done so in the hope of promoting among their countrymen a more thorough knowledge of their frames of government, and a more just appreciation of the great principles on which they are founded.

Border Security: Funding, Technologies and Enforcement
Pascal Beaumont
In series: American Political, Economic, and Security Issues
Hardcover: 978-1-53615-028-5. $195.00.

In today’s ever-expanding global movement of people border security becomes increasingly important. Stopping the illegal movement of weapons, drugs, and people, while allowing lawful trade and travel, is essential to our nation’s security and economic prosperity. This book examines the funding, technologies and enforcement used to keep our borders secure. Chapter 1 reviews the critical infrastructure, technology, and personnel funding needed by U.S. Customs and Border Protection to enhance our Nation’s border security. On January 25, 2017, in one of his first acts as President, Donald Trump ordered “the immediate construction of a physical wall on the southern border. As reported in chapter 2, Border Residential agents have rarely recommended building a wall to address the most commonly identified vulnerabilities – or “capability gaps” – along the southwest border. More often, agents recommended additional technology and personnel as solutions for securing the border. The U.S. Border Patrol, within the Department of Homeland Security’s (DHS) U.S. Customs and Border Protection (CBP), has made progress deploying surveillance technology—a mix of radars, sensors, and cameras—along the southwest U.S. border as described in chapter 3. There is a wave of foreign nationals headed for the U.S. southern border. Chapter 4 discusses the impending arrival of what was initially called an immigrant caravan, which remains a challenge of U.S. border security. The San Diego-based group, Pueblo Sin Fronteras, or People Without Borders, has taken credit for organizing the effort. While they claim to provide humanitarian aid to migrants and refugees, what they are doing now is undermining the rule of law. Chapter 5 highlights the potential vulnerabilities in the visa issuance process. U.S. Immigration and Customs Enforcement (ICE), a component within the Department of Homeland Security (DHS), implemented the Visa Security Program (VSP) in 2003. ICE has since deployed officials to certain U.S. embassies and consulates overseas to strengthen the visa review process by working with Department of State (State) consular officers in reviewing applications.

Chief Information Officers (CIOs): Shortcomings, Responsibilities and Budget Approvals
Abraham Armstrong
In series: Government Procedures and Operations
2019.

Agencies plan to spend more than $96 billion on IT in fiscal year 2018; however, they continue to face longstanding challenges in doing so. Congress established the Chief Information Officers (CIO) position to serve as an agency focal point for IT to address these challenges. Recognizing the importance of the CIO position to successful IT management a government-wide review of CIO responsibilities was conducted. The objective of chapter 1 is to determine the extent to which agencies have addressed the role of the CIO in accordance with federal laws and guidance, and major factors that have enabled and challenged agency CIOs in fulfilling their responsibilities to carry out federal laws and guidance. The Federal Information Technology Acquisition Reform Act (FITARA) provided an opportunity to strengthen the authority of CIOs to provide needed direction and oversight of agencies’ IT budgets. Chapter 2 addresses the extent to which selected federal agencies established policies and procedures that address IT budgeting consistent with FITARA and OMB guidance, and implemented processes to ensure that annual IT budgets are informed by reliable cost information.
Coast Guard: Capabilities and Challenges for the Future

Drew Harris

In series: Congressional Policies, Practices and Procedures

The Coast Guard, within the Department of Homeland Security (DHS), is charged with preventing loss of life, injury, and property damage in the maritime environment through its SAR mission. It maintains over 200 stations with various assets, such as boats and helicopters (depending on the station), along U.S. coasts and inland waterways to carry out this mission, as well as its other missions such as maritime security. Chapter 1 will review: the status of the Coast Guard's recapitalization program; new technologies that could assist the Coast Guard; maintenance requirements of its ageing vessels; operating costs for the new vessels; and shore-side infrastructure needs and priorities. The Coast Guard’s missions in the Arctic include: defense readiness, ice operations, marine environmental protection, and ports, waterways and coastal security. Chapter 2 discusses the Coast Guard’s Arctic capabilities. Chapter 3 addresses the extent to which the Coast Guard has (1) a sound process for analyzing the need for its boat stations and (2) taken actions to implement its boat station process results.

Democracy in America. Volume 1

Alexis de Tocqueville

In series: American Political, Economic, and Security Issues
Hardcover: 978-1-53615-296-8. $310.00.

Democracy in America, written by French lawyer Alexis de Tocqueville in 1831, documents his travels through America where he finds an equality unknown in Europe. When Alexis de Tocqueville came to study Democracy in America, the trial of nearly a half-century of the working of our system had been made, and it had been proved, by many crucial tests, to be a government of "liberty regulated by law," with such results in the development of strength, in population, wealth, and military and commercial power, as no age had ever witnessed. Democracy in America was received at once by the scholars and thinkers of Europe as a profound, impartial, and entertaining exposition of the principles of popular, representative self-government. This book continues to be as important today as when it was first written.

Democracy in America. Volume 2

Alexis de Tocqueville

In series: American Political, Economic, and Security Issues
Hardcover: 978-1-53615-298-2. $270.00.

Democracy in America, written by French lawyer Alexis de Tocqueville in 1831, documents his travels through America where he finds an equality unknown in Europe. When Alexis de Tocqueville came to study Democracy in America, the trial of nearly a half-century of the working of our system had been made, and it had been proved, by many crucial tests, to be a government of "liberty regulated by law," with such results in the development of strength, in population, wealth, and military and commercial power, as no age had ever witnessed. Democracy in America was received at once by the scholars and thinkers of Europe as a profound, impartial, and entertaining exposition of the principles of popular, representative self-government. This book continues to be as important today as when it was first written.

Government Reports on Government Operations for March 2019

Evie Boan

In series: American Political, Economic, and Security Issues

This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of March, grouped according to the topic: Government Operations.
Government Reports on National Defense for March 2019
*Niklas Schaefer*
In series: *American Political, Economic, and Security Issues*
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of March, grouped according to the topic: National Defense.

Immigration and Migration: Trends, Management and Challenges
*Lucas Descoteaux*
In series: *Immigration in the 21st Century: Political, Social and Economic Issues*
Hardcover: 978-1-53615-838-0. $82.00.
e-book: 978-1-53615-839-7. $82.00.
Immigration and Migration: Trends, Management and Challenges explores the governance of immigrant religious groups. More specifically, the opening paper uses Foucault’s concept of governmentality as an analytical framework to frame a qualitative case study of Ghanaian and Somali immigrants in Hamilton, Ontario, Canada. The authors go on to analyze gender differences in labor conditions and health, such as access to paid work and health services, disparities in salaries and work sectors and comparative morbidity patterns between male and female immigrants. Next, a mobile-assisted language learning framework (using a language application and a tablet) was developed to assist low-level English migrant women to acquire, expand and enrich their English vocabulary. This was achieved through a research project with 15 migrant women who were grouped into three case studies, where each experienced different learning environments. The final chapter describes the specific migratory phenomenon of children who migrate alone, making a comparison among European areas. Focus is placed on the Italian context (given that Italy is often the country where migrants first arrive) and the US context in order to understand the connection to the broader landscape of globalization.

Information Security and Technology Reports for December 2018
*Lauren Van Raalte*
In series: *American Political, Economic, and Security Issues*
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of December, grouped according to the topics Information Security and Technology.

Insights into Secrecy and Information Policy
*Clarence Armstrong*
In series: *American Political, Economic, and Security Issues*
In series: *Government Procedures and Operations*
Hardcover: 978-1-53615-408-5. $160.00.
This book is a compilation of government reports from 2018 and 2019 on secrecy and information policies and procedures. The first 49-page report is from January 2019 and begins with an overview of the standards governing – and exceptions applicable to grand jury secrecy. The report examines whether and how the rule of grand jury secrecy and its exceptions apply to Congress. The second report in this book focuses on disclosure requirements that provide transparency so that the electorate, the Senate and employing agencies are aware of potential conflicts of interest that presidential candidates, executive branch nominees and other high-ranking executive officials have. Should Congress consider legislation addressing financial conflicts of interests for executive branch officials, it may revisit disclosure requirements. The next 3-page report from 2018 revisits the issue of whether courts have inherent authority (and obligation) to release secret grand jury materials. Following this report is a discussion on the public release of newly appointed Judge Kavanaugh’s records and whether the scope and volume of the records released is similar to previous Supreme Court nominees. The fifth report provides information on locating military unit histories and individual service records of discharged, retired and deceased military personnel. It also provides information on locating and replacing military awards and medals. Included is contact information for military history centers, websites for additional sources of research and a bibliography of other publications, including related CRS reports. Next, is an exploration of whether executive privilege applies to the communications of a President-Elect. The final chapter in this book is a 76-page analysis of the Resolutions of Inquiry (a simple resolution making a direct request or demand of the President or the head of an executive department to furnish the House with specific factual information in the Administration’s possession) and their use in the House from 1947 to 2017.
Key Congressional Reports on Energy and Environment for March 2019

Markus Bachmeier

In series: Energy Policies, Politics and Prices
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service on Energy and Environment during the month of March.

Key Government Reports on Government Operations for May 2019

Anne D. Simonsen

In series: American Political, Economic, and Security Issues
In series: Government Procedures and Operations
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of May, grouped according to the topic: Government Operations.

Key Government Reports on Homeland Security for June 2019

Antoinette Labonté

In series: American Political, Economic, and Security Issues
Softcover: 978-1-53616-570-8. $95.00.
e-book: 978-1-53616-571-5. $95.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of June, grouped according to the topic: Homeland Security.

Key Government Reports on Homeland Security for May 2019

Michelle O. Skov

In series: American Political, Economic, and Security Issues
In series: Safety and Risk in Society
Softcover: 978-1-53616-259-2. $95.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of May, grouped according to the topic: Homeland Security.

Key Government Reports on Information Technology for June 2019

Alain Verte feuille

In series: Computer Science, Technology and Applications
Softcover: 978-1-53616-572-2. $95.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of June, grouped according to the topic: Information Technology.

Key Government Reports on Justice and Law Enforcement for June 2019

Zacharie Thibodeau

In series: Law, Crime and Law Enforcement
Softcover: 978-1-53616-574-6. $95.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of June, grouped according to the topic: Justice and Law Enforcement.
Key Government Reports on National Defense for May 2019
Michelle O. Skov
In series: American Political, Economic, and Security Issues
In series: Safety and Risk in Society
Hardcover: 978-1-53616-261-5. $230.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of May, grouped according to the topic: National Defense.

Key Government Reports. Volume 1: March 2019
Ernest Clark
In series: Month in Review
Hardcover: 978-1-53615-625-6. $230.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of March, grouped according to topics. This book is focused on the following topics: Agriculture and Food · Auditing and Financial Management · Budget and Spending · Business Regulation and Consumer Protection · Energy.

Key Government Reports. Volume 2: December 2018
Ernest Clark
In series: Month in Review
Hardcover: 978-1-53615-627-0. $195.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of December, grouped according to topics. This book is focused on the following topics: Financial Markets and Institutions · Health Care · Retirement Security · Transportation · Veterans.

Key Government Reports. Volume 3: December 2018
Ernest Clark
In series: Month in Review
Hardcover: 978-1-53615-629-4. $230.00.
e-book: 978-1-53615-630-0. $230.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of December, grouped according to topics. This book is focused on the following topics: Government Operations · National Defense.

Key Government Reports. Volume 4: January 2019
Ernest Clark
In series: Month in Review
Hardcover: 978-1-53615-643-0. $195.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of January, grouped according to topics. This book is focused on the following topics: Auditing and Financial Management · Employment.
Key Government Reports. Volume 5: January 2019
Ernest Clark
In series: Month in Review
Hardcover: 978-1-53615-645-4. $160.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of January, grouped according to topics. This book is focused on the following topics: · Government Operations · Homeland Security · International Affairs · National Defense.

Key Government Reports. Volume 6: February 2019
Ernest Clark
In series: Month in Review
Hardcover: 978-1-53615-675-1. $160.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of February, grouped according to topics.

Key Government Reports. Volume 7: February 2019
Ernest Clark
In series: Month in Review
Hardcover: 978-1-53615-677-5. $230.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of February, grouped according to topics. This book is focused on the following topics: · Energy · Government Operations · Health Care · Justice and Law Enforcement · Retirement System · Telecommunications.

Key Government Reports. Volume 8: February 2019
Ernest Clark
In series: Month in Review
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of February, grouped according to topics. This book is focused on the following topics: · Homeland Security · International Affairs · Unaccompanied Children · Veteran’s Health · Worker and Family Assistance.

Key Government Reports. Volume 9: March 2019
Ernest Clark
In series: Month in Review
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of March, grouped according to topics. This book is focused on the following topics: · Agriculture and Food · Energy · Justice and Law Enforcement · Natural Resources and Environment.
Key Government Reports. Volume 10: March 2019

Ernest Clark

In series: *Month in Review*


Hardcover: 978-1-53615-768-0. $230.00.


This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of March, grouped according to topics. This book is focused on the following topics: · Budget and Spending · Business Regulation and Consumer Protection · Economic Development.

Key Government Reports. Volume 11: March 2019

Ernest Clark

In series: *Month in Review*


This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of March, grouped according to topics. This book is focused on the following topics: · Education · Transportation.

Key Government Reports. Volume 12: March 2019

Ernest Clark

In series: *Month in Review*


Hardcover: 978-1-53615-772-7. $160.00.


This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of March, grouped according to topics. This book is focused on the following topics: · Employment · Housing · Human Capital.

Key Government Reports. Volume 13: March 2019

Ernest Clark

In series: *Month in Review*


This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service during the month of March, grouped according to topics. This book is focused on the following topics: · Government · Middle East.

Key Government Reports. Volume 14: March 2019

Ernest Clark

In series: *Month in Review*


Hardcover: 978-1-53615-886-1. $230.00.


This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service during the month of March, grouped according to topics. This book is focused on the following topics: · Business · Education · Finance.

Key Government Reports. Volume 15: April 2019

Ernest Clark

In series: *Month in Review*


Hardcover: 978-1-53615-999-8. $160.00.

e-book: 978-1-53616-000-0. $160.00.

This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of April, grouped according to topics. This book is focused on the following topics: · Energy · Science and Technology.
Key Government Reports. Volume 16: April 2019  
*Ernest Clark*  
In series: *Month in Review*  
Hardcover: 978-1-53616-001-7. $195.00.  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of April, grouped according to topics. This book is focused on the following topics: · Finance · Government Operations · Veterans.

Key Government Reports. Volume 17: Information Security and Technology - April 2019  
*Ernest Clark*  
In series: *Month in Review*  
Hardcover: 978-1-53616-003-1. $195.00.  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of April, grouped according to the topics: Information Security and Technology.

Key Government Reports. Volume 18: National Defense - April 2019  
*Ernest Clark*  
In series: *Month in Review*  
Hardcover: 978-1-53616-005-5. $195.00.  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of March, grouped according to the topic: National Defense.

Key Government Reports. Volume 19: April 2019  
*Ernest Clark*  
In series: *Month in Review*  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of April, grouped according to topics. This book is focused on the following topics: · Agriculture and Food · Business · Education · Natural Resources and Environment.

Key Government Reports. Volume 20: Homeland Security - April 2019  
*Ernest Clark*  
In series: *Month in Review*  
Hardcover: 978-1-53616-084-0. $195.00.  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of April, grouped according to the topic: Homeland Security.

Key Government Reports. Volume 21 - May 2019  
*Ernest Clark*  
In series: *Month in Review*  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of May, grouped according to topics. This book is focused on the following topics: · Health Care · Retirement Security · Tax Policy and Administration.
Key Government Reports, Volume 22 - May 2019
Ernest Clark
In series: Month in Review
Hardcover: 978-1-53616-339-1. $160.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of May, grouped according to topics. This book is focused on the following topics: · Agriculture · Energy · Science and Technology · Space.

Migration and Refugees: Global Patterns and Local Contexts
Daniel Leitch (University of Wisconsin Platteville, Platteville, WI, US), Angelika Groterath (Head of the international curriculum Social Work Plus, Migration and Globalization in the Department of Social Work, University of Applied Sciences Darmstadt, Germany) and Kibreab Habtemichael (Director of the Office of Integration in Viernheim, Lecturer at Applied University of Darmstadt, Darmstadt, Germany)
In series: Immigration in the 21st Century: Political, Social and Economic Issues
Softcover: 978-1-53615-400-9. $95.00.
e-book: 978-1-53615-401-6. $95.00.
Global migration possesses a very diverse and dynamic nature. To gain a critical understanding of global migration, scholarly research and ideas need to revolve around sub-regional and interdisciplinary approaches. This book, Migration & Refugees: Global Patterns and Local Contexts, combines the editing skills and insights of three accomplished researchers, authors, and practitioners in the field. The collection of chapters weave together the themes detailed below while providing a diverse yet coherent point of reference for the readers. Book themes: • The Nexus between Migration and Mobility; • Push and Pull: Refugee’s Life Choices; • Refugee Journey and Trauma; • The Geopolitical Analysis of Migration; • Integration, Inclusion, or Assimilation: Policy Dilemmas; • Prospects of Refugees within the Socio-Economic Landscape of Host Communities; • Women and Migration; • Racism as a Challenge for Integration.

National Defense Reports for February 2019
Elvira Weaver
In series: American Political, Economic, and Security Issues
Hardcover: 978-1-53615-673-7. $230.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of February on national defense.

The Political Economy of National and Energy Security
Pantelis Sklias (Neapolis University Pafos, Cyprus), Spyros Roukanas (Department of International and European Studies, School of Economics, Business and International Studies, University of Piraeus, Greece) and Floros Flouros, MBA, MA, MSc, PhD candidate (Department of Political Science and International Relations, School of Social and Political Sciences, University of the Peloponnese, Greece)
In series: Energy Policies, Politics and Prices
The aim of this collective volume is to study the crucial aspects related to the interconnection between the political economy of energy security and national security, which is of great importance globally, due to great volatility and complexity. Several conceptual frameworks regarding the
issue of energy security are examined in order to understand the relationships between relevant parameters and then to investigate their implications for national security. Research needs to examine how energy security affects national security of nation states around the world, either as producers or consumers of energy resources. In this volume, the theory of realism is employed for the analysis of such concepts, as it emphasizes the primary importance of any given state and its national security, whereas realism is essentially a political ideology and looks to provide the proper spectrum for further analysis. The fact that the political economy of energy security and the political economy of national security are addressed as separate parts in the literature are among the main drawbacks in our effort to comprehend the issues concerned. The abovementioned results to a dichotomy that affects the ontological and epistemological essence of the two pillars of the issue in question based on our working hypothesis should be addressed in a complementary and interconnected way.

Addressing both theoretical concepts and case studies to validate the argument, the authors believe that the academic level of the proposed subject is related to graduate and postgraduate studies.

**Whistleblowers: Protection, Practices and Disclosure**

*Isabelle Guertin*

In series: *American Political, Economic, and Security Issues*


Hardcover: 978-1-53616-310-0. $230.00.


Whistleblowing is “the act of reporting waste, fraud, abuse and corruption in a lawful manner to those who can correct the wrongdoing.” Safeguarding confidentiality to the maximum extent possible is essential for encouraging whistleblowers to report wrongdoing without fear of reprisal. This book discusses the practices and programs that protect whistleblowers.

**Congressional Activity**

*A Closer Look at Farm Bills*

*Arturo Burns*

In series: *Congressional Policies, Practices and Procedures*


Hardcover: 978-1-53614-893-0. $195.00.


Congress has been active in establishing federal policy for the agricultural sector on an ongoing basis since the 1930s. Over the years, as economic conditions and technology have evolved, Congress has regularly revisited agricultural policy through periodic farm legislation. Across these decades, the breadth of policy areas addressed through such farm bills has expanded beyond providing support for a limited number of agricultural commodities to include establishing programs and policies that address a broad spectrum of related areas, such as agricultural conservation, credit, rural development, domestic nutrition assistance, trade and international food aid, organic agriculture, forestry, and support for beginning and veteran farmers and ranchers, among others. On June 21, 2018, the House voted to approve H.R. 2, the Agriculture and Nutrition Act of 2018, an omnibus farm bill that would establish farm and food policy for the next five years. The Senate passed its version of H.R. 2, the Agriculture Improvement Act of 2018, on June 28, 2018.

*A Closer Look at the 2020 Census*

*Sille M. Schou*

In series: *Congressional Policies, Practices and Procedures*

2020.

Hardcover: 978-1-53616-508-1. $230.00.


The U.S. Constitution requires a population census every 10 years for apportioning seats in the House of Representatives. Decennial census data are used, too, for within-state redistricting and in certain formulas for distributing more than $450 billion annually in federal funds to states and localities. Census counts also are the foundation for estimates of current population size between censuses and projections of future size. Businesses, nonprofit organizations, researchers, and all levels of government are steady consumers of decennial and other census data. The bureau’s task in conducting the enumeration can be summarized in very basic terms: count each person whose usual residence is in the United States (the aim of complete census coverage); and count that person only once, at the right location, where the person lives all or most of the time (the goal of census accuracy). This book highlights key issues pertaining to the 2020 Census.
Congress: Salaries, Health Benefits, Organizations and Internships
Kai De Vis
In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-53616-113-7. $195.00.
Congress is required by Article I, Section 6, of the Constitution to determine its own pay. In the past, Congress periodically enacted specific legislation to alter its pay; the last time this occurred affected pay in 1991. More recently, pay has been determined pursuant to laws establishing formulas for automatic adjustments. Chapters 1 provides historical tables on the rate of pay for Members of Congress since 1789; details on enacted legislation with language prohibiting the automatic annual pay adjustment since the most recent adjustment; the adjustments projected by the Ethics Reform Act as compared with actual adjustments in Member pay; and Member pay in constant and current dollars since 1992. Chapter 2 contains information on actions taken affecting each pay year since the establishment of the Ethics Reform Act adjustment procedure. Chapter 3 provides basic information on congressional salaries and allowances and recent developments. Chapter 4 provides pay data for 16 staff position titles that are typically used in Senators’ offices. Chapter 5 provides pay data for 13 staff position titles that are used in Senate committees, and for which sufficient data could be identified. Chapter 6 provides pay data for 12 staff position titles that are typically used in House Members’ offices. Chapter 7 provides pay data for 11 staff position titles that are used in House committees. The federal government, as an employer, also offers health benefits to its employees and retirees.1 In general, federal employees receive health benefits through the Federal Employees Health Benefits (FEHB) Program, administered by the Office of Personnel Management (OPM). In addition to health insurance coverage, chapter 8 describes other health benefits available to Members and congressional staff, including the Federal Flexible Spending Account Program (FSAFEDS); the Federal Employees Dental and Vision Insurance Program (FEDVIP); the Federal Long Term Care Insurance Program (FLTCIP); the Office of the Attending Physician; and treatment in military facilities. Chapter 9 examines the historical development and contemporary role of Congressional Member Organizations (CMOs) in the House, as well as informal Member groups in the House, Senate, and across the chambers. Commonly, these groups are referred to as caucuses, but they will be referred to collectively as informal Member organizations in this chapter to avoid confusion with official party caucuses. Many interns serve Congress, assisting individual Members, committees, and other offices or support services. Interns serve the House or Senate in a temporary capacity, primarily for an educational benefit, although some interns may receive pay for their service. Chapter 10 addresses frequently asked questions (FAQs) about congressional interns and internships.

Homeland Security: Overview and Issues
Emmett Willis
In series: Congressional Policies, Practices and Procedures
Softcover: 978-1-53615-410-8. $95.00.
e-book: 978-1-53615-411-5. $95.00.
This book is a compilation of CRS reports in 2018 and 2019 addressing Homeland Security issues. The first chapter is a 34-page report on the Disaster Relief Fund (DRF), one of the most-tracked single accounts funded by Congress. The report introduces the DRF and provides a brief history of federal disaster relief programs. It goes on to discuss the appropriations that fund the DRF, and provides a funding history from FY1964 to the present day. It concludes with a discussion of how the budget request for the DRF has been developed and structured, given the unpredictability of the annual budgetary impact of disasters, and raises some potential issues for congressional consideration. The next two reports are focused on The Assistance to Firefighters Grant (AFG) Program and the Firefighter Assistance Grants, the former of which provides grants directly to local fire departments and unaffiliated Emergency Medical Services (EMS) organizations to help address a variety of equipment, vehicle, training and other firefighter-related and EMS needs. Subsequent reports are focused on Homeland Security Issues including US immigration laws for aliens arriving at the border, the Stafford Act Assistance (authorizes the President to issue two types of declarations that could potentially provide federal assistance to states and locales in response to a terrorist attack. This has been used in the past including in the September 11th 2001 attacks and the 2013 Boston Marathon attack). The last report is a discussion and analysis on whether DACA recipients are eligible for federal employment in the United States.

Key Congressional Reports for April 2019 - Law
Tori R. Anderson
In series: Congressional Policies, Practices and Procedures
In series: Laws and Legislation
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service on Law during the month of April.
Key Congressional Reports for April 2019 - National Defense
David Lister
In series: Congressional Policies, Practices and Procedures
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service on National Defense during the month of April.

Key Congressional Reports for April 2019. Part I
Sergio Frank
In series: Congressional Policies, Practices and Procedures
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service during the month of April, grouped according to topics. This book is focused on the following topics: · Business · Finance.

Key Congressional Reports for April 2019. Part II
Sergio Frank
In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-53616-082-6. $230.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service during the month of April, grouped according to topics. This book is focused on the following topics: · Education · Foreign Policy · Health Policy · Technology.

Key Congressional Reports for February 2019. Part I
Mandy Todd
In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-53615-735-2. $230.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service during the month of February, grouped according to topics. This book is focused on the following topics: · Environment · Immigration · Military.

Key Congressional Reports for February 2019. Part II
Mandy Todd
In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-53615-737-6. $195.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service during the month of February, grouped according to topics. This book is focused on the following topics: · Business · Finance.

Key Congressional Reports for February 2019. Part III
Mandy Todd
In series: Congressional Policies, Practices and Procedures
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service during the month of March, grouped according to topics. This book is focused on the following topics: · Energy · Homeland Security and Appropriations · International Trade and Finance · Nuclear Weapons.
Key Congressional Reports for March 2019. Part I  
Sergio Frank

In series: Congressional Policies, Practices and Procedures  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service during the month of March, grouped according to topics. This book is focused on the following topics: · Information Security & Technology · Military Technology.

Key Congressional Reports for May 2019 - International Relations  
Aston Dunkley

In series: Congressional Policies, Practices and Procedures  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service on International Relations during the month of May.

Key Congressional Reports for May 2019 –Technology  
Aston Dunkley

In series: Congressional Policies, Practices and Procedures  
Hardcover: 978-1-53616-335-3. $195.00.  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service on International Relations during the month of May.

Key Congressional Reports for May 2019. Part I  
Piotr Meza

In series: Congressional Policies, Practices and Procedures  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service during the month of May, grouped according to topics. This book is focused on the following topics: · Agriculture · Environment.

Key Congressional Reports for May 2019. Part II  
Piotr Meza

In series: Congressional Policies, Practices and Procedures  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service during the month of May, grouped according to topics. This book is focused on the following topics: · Government Operations · Homeland Security.

Key Congressional Reports for May 2019. Part III  
Piotr Meza

In series: Congressional Policies, Practices and Procedures  
Hardcover: 978-1-53616-384-1. $230.00.  
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service during the month of May, grouped according to topics. This book is focused on the following topics: · Health · Social Policy.
Key Congressional Reports for May 2019. Part IV
Piotr Meza
In series: Congressional Policies, Practices and Procedures
2019.
Hardcover: 978-1-53616-386-5. $195.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service during the month of May, grouped according to topics. This book is focused on the following topics: · Law · Transportation.

Key Congressional Reports on International Affairs
Hattie Ross
In series: Congressional Policies, Practices and Procedures
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service on U.S. International Relations during the month of February.

Key Congressional Reports on U.S. International Relations
James Makinson
In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-53615-930-1. $230.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service on U.S. International Relations during the month of March.

The Alien Tort Claims Act
James Biser Whisker (Professor Emeritus, Political Science, West Virginia University, Morgantown, WV, US) and Kevin R. Spiker (Associate Professor, Political Science Department, Ohio University, St. Clairsville, OH, US)
In series: Political Science and History
The Alien Tort Claim Act, aka the Alien Tort Statute, was part of the Judiciary Act of 1789. Only in 1980 did the U.S. federal courts find any significant meaning in it. Initially, the ATCA applied to violations of basic rules of international law, such as piracy. It was applied at the beginning of 1980 to human rights violations. Its meaning was expanded to incorporate liability, but in 2013 the U.S. Supreme Court ended such lawsuits.

The Clean Air Act and The Clean Power Plan
Claire Ferguson
In series: Environmental Remediation Technologies, Regulations and Safety
In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-53614-825-1. $160.00.
The principal statute addressing air quality concerns, the Clean Air Act was first enacted in 1955, with major revisions in 1970, 1977, and 1990 and is addressed in the first part of this book. Congressional actions on air quality issues have been dominated since 2011 by efforts— particularly in the House—to change the Environmental Protection Agency’s (EPA’s) authority to promulgate or implement new emission control requirements. EPA’s regulations on greenhouse gas emissions from electric power plants and from oil and gas industry sources have been of particular interest, as have the agency’s efforts to revise ambient air quality standards for ozone. The 115th Congress and the Trump Administration are reviewing some of these regulations, with the possibility of their modification or repeal. On October 23, 2015, the U.S. Environmental Protection Agency (EPA) published its final Clean Power Plan rule (Rule) to regulate emissions of
greenhouse gases (GHGs), specifically carbon dioxide (CO2), from existing fossil fuel-fired power plants. The aim of the Rule, according to EPA, is to help protect human health and the environment from the impacts of climate change. The Clean Power Plan would require states to submit plans to achieve state-specific CO2 goals reflecting emission performance rates or emission levels for predominantly coal- and gas-fired power plants, with a series of interim goals culminating in final goals by 2030.

Top 10 Reports and Testimonies in December 2018
Sarah J. Nygaard
In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-53615-507-5. $230.00.
This book is a compilation of significant reports and testimonies issued in December 2018.

Top 10 Reports and Testimonies in January 2019
Mark A. Overgaard
In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-53615-482-5. $230.00.
This book is a compilation of significant reports and testimonies issued in January 2019.

Top 5 Reports and Testimonies in August 2018
Chad Johnston and Winifred Payne
In series: Congressional Policies, Practices and Procedures
This book is a compilation of significant reports and testimonies issued in August 2018.

Who is Serving in the United States Congress?
Maurice Ray
In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-53615-523-5. $195.00.
This book presents a profile of the membership of the 115th Congress (2017-2018) as of October 1, 2018. Statistical information is included on selected characteristics of Members, including data on party affiliation, average age, occupation, education, length of congressional service, religious affiliation, gender, ethnicity, foreign births, and military service.

Foreign Relations

Government Reports on International Affairs for March 2019
Kristian Frey
In series: American Political, Economic, and Security Issues
Hardcover: 978-1-53615-850-2. $160.00.
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of March, grouped according to the topic: International Affairs.
Key Congressional Reports for April 2019 - International Relations

James Makinson

In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-53616-076-5. $230.00.

This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the Congressional Research Service on International Relations during the month of April.

The Middle East: Background and U.S. Relations

Doyle Keller

In series: Politics and Economics of the Middle East
In series: Political Science and History
Hardcover: 978-1-53616-191-5. $230.00.

This book is a compilation of reports on the Middle East. Chapters 1 and 2 discuss the kingdom of Saudi Arabia’s relations with the United States, its stability, and its future trajectory. Iraq’s government declared military victory against the Islamic State organization (IS, aka ISIS/ISIL) in December 2017, but insurgent attacks by remaining IS fighters threaten Iraqis as they shift their attention toward recovery and the country’s political future as reported in chapter 3. Chapter 4 provides an overview of Jordanian politics and current issues in U.S.-Jordanian relations. Chapter 5 provides an overview of Lebanon and current issues of U.S. interest. As discussed in chapter 6, Congress has actively engaged on several issues involving Turkey. Chapter 7 identifies the basis in U.S. law for sanctions imposed on Iran, and the nature of the authority to waive or lift those restrictions.

Laws and Legislation

A Closer Look at the Freedom of Information Act

Alexis Yu

In series: Laws and Legislation
Hardcover: 978-1-53616-229-5. $195.00.

FOIA requires federal agencies to provide the public with access to government records and information based on the principles of openness and accountability in government. The objective of chapter 1 was to determine the extent to which agencies have implemented selected FOIA requirements; describe the methods established by agencies to reduce backlogged requests and the effectiveness of those methods; and identify any statutory exemptions that have been used by agencies as the basis for withholding (redacting) information from requesters. Chapter 2 provides information regarding federal court decisions that pertain to the improper withholding of FOIA records. The chapter discusses how many court decisions citing the improper withholding of FOIA records have resulted in disciplinary actions against responsible agency personnel. Chapter 3 reviews DOL’s FOIA processing including how the department and its components manage and process FOIA requests, how they prioritize requests, and the extent that responses to requests have been timely; and how many lawsuits DOL has been subjected to arising from FOIA requests, and the results of those lawsuits. Chapter 4 determines FOIA litigation-related costs incurred by federal agencies for lawsuits in which the plaintiffs substantially prevailed. Congress is currently considering legislation that would make substantive changes to the Freedom of Information Act (FOIA). Chapter 5 provides a side-by-side comparison of the bills, using the versions that have passed each of their originating congressional chambers.

A Guide to Border Control and Patrol

Alison Knapp

In series: Congressional Policies, Practices and Procedures
In series: Safety and Risk in Society
Hardcover: 978-1-53615-083-4. $195.00.

The government reports included in this book range from June to September 2018 and examine US border control and security. The first report is focused on the Department of Homeland Security. The Department of Homeland Security (DHS) was established by the Homeland Security Act of 2002 and began operations in 2003. This report examines the Department of Homeland Security’s (DHS) Office of Strategy, Policy and Plans as well as its Sub-Offices. The second report is an assessment of selected DHS components requirements infrastructure (such as Customs and Border Protection, Federal Emergency Management Agency, the US Coast Guard, and the US Citizenship and Immigration Services). It
provides recommendations on additional practices that could help better develop operational requirements. Next, the southwest border of the United States has long been vulnerable to cross-border illegal activity. According to Border Patrol data, in Fiscal year 2017, Border Patrol agents apprehended 304,000 illegal entrants. Additionally, the US Customs and Border Protection’s (CBP) spent approximately $2.3 billion between 2007 and 2015 to deploy physical barriers along the nearly 2,000-mile southwest border. In the third report, the progress DHS has made is examined as well as the challenges it has faced implementing its border security efforts. In January and March 2017, the President issues a series of executive orders related to border security and immigration. The fourth report included in this book reviews the agencies’ implementation of the executive orders and related spending. Finally, the processes for tracking and unifying separated families are looked at and the progress and challenges in recruiting, hiring and retaining law enforcement personnel for US Customers and Border Protection is discussed in detail.

**Advanced Fossil Energy, Licensing of Patented Laboratory Inventions and Considerations for Maintaining US Competitiveness in Potentially Transformational Research Areas**

*Edward Carr*

In series: *Congressional Policies, Practices and Procedures*  
Hardcover: 978-1-53615-071-1. $160.00.  

The government documents included in this book are comprised of reports and testimonies from June 2018 to September 2018 on research and development in the United States. The first report examines research and development projects started from 2010 through 2017 on advanced fossil energy. For more than 100 years, three fossil fuel sources – coal, oil and natural gas – have made up at least 80% of total US energy consumption. While fossil fuels are associated with some negative environmental impacts – such as carbon dioxide emissions, the predominance of coal, oil and natural gas is likely to continue into the future. The second report focuses on considerations for maintaining US competitiveness in Quantum Computing, Synthetic Biology and other potentially transformational research advances. Federal support in such areas can accelerate innovation and drive technological advances and promote US competitiveness in the global economy. The third and final report focuses on additional actions needed to improve licensing of patented laboratory inventions. The GAO was asked to review agency practices for managing inventions developed at federal labs, with a particular focus on patent licensing. This report examines the challenges in licensing patents and steps take to address and report them.

**Coast Guard: Maritime Safety, Transparency and Acquisitions**

*Shaun Carr*

In series: *Laws and Legislation*  
Hardcover: 978-1-53614-891-6. $230.00.  

The U.S. Coast Guard is the nation’s principal law enforcement authority on U.S. waters. Its missions include maritime safety and security, marine environmental protection, search and rescue, drug and migrant interdiction, fisheries enforcement, and defense readiness. The Coast Guard’s responsibilities are specified in legislation establishing the agency as well as authorization bills typically passed by Congress every one to two years and in Department of Homeland Security appropriations acts.

**Regulatory and Legislative Issues for the Maritime Administration**

*Cornelius Wolfe*

In series: *Congressional Policies, Practices and Procedures*  
Hardcover: 978-1-53615-464-1. $230.00.  

The purpose of the legislation discussed in chapter 1 is to do the following: support national defense and the United States Merchant Marine by authorizing the Maritime Administration (MARAD) for fiscal year (FY) 2019, including the National Security Multi-Mission Vessel Program; implement Department of Transportation (DOT) Office of Inspector General (OIG) recommendations to improve protections and incident reporting related to sexual assault and harassment; improve merchant mariner training for cadets by providing additional opportunities for on-the-job experience via the Sea Year program and by supporting State Maritime Academy training vessels; and create new opportunities for domestic ship recycling by streamlining the import process. Chapter 2 discusses the National Marine Sanctuary Act, which grants the Secretary of Commerce the authority to designate areas of additional restriction and management over areas in America’s oceans and Great Lakes and their unique conservation, cultural, or historic significance. Federal agencies respond to abandoned and derelict vessels (ADV) in accordance with federal law, interagency agreements, and funding availability. Chapter 3 reviews actions federal and state agencies have taken to address ADVs in U.S. waterways. This chapter examines (1) key factors that guide how federal agencies respond to ADVs; (2) the extent federal agencies track ADVs and their expenditures for responding to them; and (3) actions states have taken to address ADVs and the factors they cite as
affecting their efforts. On January 1, 2020, new, more stringent maritime emission regulations are scheduled to take effect for all ocean-going vessels as reported in chapter 4.

Security Clearance: Background, Evaluation and Reforms

Moses Reese

In series: Congressional Policies, Practices and Procedures


Hardcover: 978-1-53615-555-6. $230.00.


A security clearance is a determination that an individual—whether a direct federal employee or a private contractor performing work for the government—is eligible for access to classified national security information. A high-quality personnel security clearance process is necessary to minimize the risks of unauthorized disclosures of classified information and to help ensure that security-relevant information is identified and assessed. Chapter 1 provides a primer on some of the fundamental aspects of the security clearance process, using a “Frequently Asked Questions” format. Chapter 2 assesses the extent to which (1) ODNI has implemented an executive branch-wide program and developed plans to monitor and measure its performance; (2) DOD and other agencies have designed, piloted, and evaluated continuous evaluation and (3) agencies completed timely periodic reinvestigations from fiscal years 2012-2016, and the potential effects of continuous evaluation on reinvestigations. Chapter 3 focuses on the extent to which executive branch agencies (1) made progress reforming the security clearance process, and (2) are meeting timeliness objectives and reducing NBIB’s investigative backlog. Chapter 4 discusses our government’s security clearance process and potential areas of reform.

Presidents

America Imperiled, Trump and the Restoration of National Values

Donald K. Sharpes, Ph.D. (Professor in the Emeritus College at Arizona State University, Tempe, USA; Senior Visiting Fellow, Cambridge University, UK)

In series: American Political, Economic, and Security Issues


This book is a partial review of the shift in American politics to a more radical, ultraconservative, far-right posture, among both the people and Republican congressional leadership during the Trump era. There is also a corresponding shift to the left among Democrats, and a dramatic rise, as high as 40% among Independent voters. My theme is simple. The Trump presidency and the 115th Congress was an updated Confederate government enabled by Russia. Trump and ultraconservatives allowed themselves to be sponsored and endorsed by an autocratic dictator, Putin, because Putin and his obedient oligarchs gave Trump money and power to flourish and demolish at least two pillars of democracy—the role of government and the idea of an inclusive society, while also perverting our global alliances. Additionally, and apart from Russia, the ultraconservative and Libertarian aim has always been to reduce any new legislation sponsoring social services and to attempt to disassemble existing social legislation. Other major goals are anti-government regulations and the lessening of taxes. I will describe this tension throughout this book, demonstrate some of this history, and show how it is the central element in our political dysfunction. This book is also partially a chronicle exposing Trump and the Republican-controlled Congress for willful damage to the democracy, and, in the second part, a recipe for restoring lost or mislaid values and ethics to government and its citizen constituents following the exit of Trump.

Foreign Policy in the Clinton Administration

Rosanna Perotti, Ph.D. (Hofstra University, Hempstead, NY, US)

In series: Presidency in the United States


Hardcover: 978-1-53614-797-1. $230.00.


Bill Clinton came to the presidency during the first moments of the post-Cold War era, when the United States and the international system were at a crossroads. Faced with the choice of either retreating from the world or acting as “world policeman,” Clinton chose a path of unabashed “practical internationalism.” His foreign policy embraced globalization, free trade and the promotion of democracy abroad, while acknowledging American limits. Scholarly and public interest in Clinton’s foreign policy have peaked
recently, as the shape of the Trump administration’s foreign policy has unfolded. Today’s populist nationalists might be seen as reacting to the Clinton agenda: They have attacked free trade and internationalism as a “bad deal” for US workers, striking out not only at trade agreements, but at immigration, refugee acceptance, US intervention, and international institutions such as the International Criminal Court and the Kyoto Protocol. Today, advocates of free trade and international engagement warn that the United States must continue to take a leadership role in steering the international agreements and institutions that it helped to create, as a way of advancing American prosperity and security. This is the reason the Clinton administration’s foreign policy legacy continues to be important today. To understand “America First,” we must first understand the underpinnings of globalization and the policy of practical internationalism. During Clinton’s time in office and not long after, many scholars struggled to find coherence to the administration’s foreign policy legacy, despite the administration’s continued assertions of an overarching strategy. Today, it is more apparent than ever that 1) Clinton’s foreign policy had a cohesive theme, 2) his internationalism sowed the seeds of our current “America First” brand of populism, and 3) Clinton’s successes and failures hold important lessons for policymakers today. The introduction to this edited volume explores these themes, and the remainder of the book’s seventeen chapters, authored by scholars of comparative politics, international relations and history, expand on particular policies. With the Trump administration midterm assessments coming in Fall 2018 and Winter 2019, there will be heightened interest in the background of such issues as engagement with North Korea; terrorism; nuclear proliferation; relations with China, India, and Japan; peacemaking in Northern Ireland; cooperation with NATO and the UN; and the difficulty of pursuing peace in the Middle East.

**Honest Abe: A Study in Integrity Based on the Early Life of Abraham Lincoln**

*Alonzo Rothschild*

In series: *Historical Figures*

In series: *American History, Culture and Literature*


Those who seek to understand the character and achievement of Abraham Lincoln must begin with a study of the man’s honesty. At the base of his nature, in the tap-root and very fiber of his being, pulsed a fidelity to truth, whether of thought or of deed, peculiar to itself. Lincoln was a poor boy growing up in a remote area. His mother died when he was young. With no formal schooling available to him, the young Lincoln set out to shape his own character.

**My Brother Theodore Roosevelt**

*Corinne Roosevelt Robinson*

In series: *American History, Culture and Literature*

In series: *Historical Figures*


Hardcover: 978-1-53615-515-0. $230.00.


My Brother Theodore Roosevelt is not a biography, it is not a political history of the times, although the author was most careful in her effort to record facts accurately, and carefully searched her memory before relating conversations or experiences. Robinson hopes this work will paint a clear picture of Roosevelt by one who was closest to him and one who knew his loyalty and tenderness of heart.

**The Early Life of Abraham Lincoln**

*Ida M. Tarbell*

In series: *Historical Figures*


e-book: 978-1-53615-966-0. $195.00.

The Early Life of Abraham Lincoln gets to the heart of young Lincoln’s life and the origins of his reputation as “honest Abe.” This biography is full of fantastic insights into Lincoln’s life: looking not just at the plain facts but also into the character of Abraham Lincoln as a young man. The story of his life, which is told here more fully and consecutively bears out our belief that Abraham Lincoln inherited from his ancestry traits and qualities of mind which made him a remarkable child and a young man of unusual promise and power. The career of Abraham Lincoln is more easily understood in view of his ancestry. So far from his later career being unaccounted for in his origin and early history, it is as fully accounted for as in the case of any man.
Asian Political, Social and Economic Issues

Development-Induced Displacement and Resettlement in Bangladesh: Case Studies and Practices. Second Edition
Mohammad Zaman, Ph.D. (Advisory Professor, Hohai University, Nanjing, China) and Hafiza Khatun (Department of Geography and Environment, University of Dhaka, Bangladesh)
In series: Asian Political, Economic and Social Issues
Softcover: 978-1-53614-224-2. $89.00.
A very first for Bangladesh, this edited book examines the complex issues of development-induced displacement and resettlement using case studies with “good practice” examples from a wide range of ongoing projects. The authors, who are largely “practitioners” in the field of resettlement studies, are well-known in the country and internationally for their expert knowledge. The book establishes a baseline for further research on resettlement and development in Bangladesh. It is rich in well-presented case studies replete with evidence-based strategies to help prevent impoverishment amongst those displaced by development projects. The chapters in this collection address emerging issues and approaches to resettlement and thus have enriched the literature in an era of rapid economic development and change. Thus, the book will remain as a valuable resource and reference or teaching aid in academic and development circles.

Encyclopedia of Asia (10 Volume Set)
Guang Hsiung and Yong Ku
In series: Asian Political, Economic and Social Issues
2019.
Hardcover: 978-1-53616-022-2. $1610.00.
This 10 volume set covers a wide range of topics, including: · maritime territorial disputes · India-U.S. economic relations · gender and resettlement in Bangladesh · flooding and erosion risk management.

North Korea and South Korea
Émilie Daoust
In series: Asian Political, Economic and Social Issues
2020.
Softcover: 978-1-53616-580-7. $82.00.
e-book: 978-1-53616-581-4. $82.00.
Hopes for denuclearization in North Korea were raised with the holding of three inter-Korean summits and the first ever North Korea-United States summit in 2018, and many discussions have taken place on building a peace regime on the Korean Peninsula. However, no practical progress on denuclearization has been made so far. Denuclearization, the signing of a peace agreement and the establishment of a peace regime all depend on progress in North Korea-US relations. Accordingly, in a situation where the respective stances of North Korea and the United States regarding denuclearization remain unchanged, the South Korean Moon Jae-in administration can only play a limited role as a mediator. As such, this collection first focuses on the essence of the denuclearization of the Korean Peninsula as an issue between the US and the Democratic People’s Republic of Korea since the Trump administration assumed office. It makes the case for rethinking the negotiations and the historical background of the denuclearization of the Korean Peninsula. The authors also provide background information on how ethnic minorities have been formed in the process of social development in Korea. In particular, the main social issues and affairs that have influenced the development of ethnic minority groups such as the government policy, economic development, labour shortage in dangerous industries, a serious shortage of marriageable partners for men in Korean rural areas and globalization since the establishment of Korea are considered. The main goal of the concluding study is to determine how Spain is perceived by South Koreans and their travel motivations, and whether Spain may be a suitable destination for Korean tourists. The information was gathered by means of a questionnaire administered to university students residing in South Korea.
Rural China in Focus: Political, Environmental and Social Issues
Noah Hamlyn-Harris

In series: China in Transition
In series: Asian Political, Economic and Social Issues
Softcover: 978-1-53615-787-1. $82.00.
e-book: 978-1-53615-788-8. $82.00.

Rural China in Focus: Political, Environmental and Social Issues first examines the factors that affect the decision of whether migrant parents should bring their children with them into new cities. Implications of the research findings for theory, practice and policy are discussed. Following this, the authors discuss the well-being of Yi minority youth, particularly their cultural learning and connectedness to the Yi group that defines their ethnic identity. The closing study investigates differences in caretaking practices between left-behind children and children from non-migrant families in rural China, and the heterogeneity within the left-behind population.

The Role of Government in Economic Growth and Development: The Cases of Korea and Vietnam
Seung-Ho Kwon, Ph.D. (Korea Research Inst. (KRI@UNSW), Univ. of N. S.h Wales, Sydney, Australia)

In series: Asian Political, Economic and Social Issues
Hardcover: 978-1-53614-757-5. $195.00.

This book explores the economic development trajectories of South Korea and Vietnam, focusing on the role of the state in economic success amidst similarities and differences in their experiences. The central role of the state in generating economic development is certainly evident in both cases, but are the paths, institutions, policies and environments the same? These are among the matters that this book explores through a systematic comparative analysis of economic development and the role of the state in South Korea and Vietnam. The results of this analysis provide lessons that will be useful for other developing countries as well as deepen our understanding of the development experiences of South Korea and Vietnam. This book is a remarkable and timely contribution. First, this book provides new insights into the understanding of the dynamics and diversity of economic development across the world and Asia as well as in Korea and Vietnam in particular. While it does not aim to offer a comprehensive study of the economic intervention policies by either country’s government and their impacts, it provides broad and qualitative perspectives on how these policies are selected, implemented and developed at different stages of economic development and in different social and political contexts. Secondly, by tracing the historical trajectories of the changes to the extent of government involvement in economic development in Korea and Vietnam presently, this book contributes to the debate on the efficacy and continuity of the well-worn East Asian model of economic development and gives a line of empirical evidence. Finally, it will help lay out the blueprint of the Vietnamese development model as envisioned by the Korean development model. The innovative nature of this book can be summarized as follows: First, this book engages a historical perspective in order to explore and understand the dynamics of the role of the government; this approach will be valuable to examine how the government has adapted to changes in environmental conditions during the process of development, industrialization and globalization. Thus, the development trajectories of each country have been examined according to three key stages. Secondly, the book uses a comparative method, comparing a wide range of economic, social and political development indicators between the two countries. The comparison between two very different East Asian countries with distinctive social, economic and political systems and at different stages of development can be instructive to show whether the state-led East Asian model has changed, evolved, diminished, or is in terminal decline. Finally, the book uses a qualitative method to generate comprehensive country case studies that are essential to uncover the specific dynamics underlying different development trajectories and outcomes.

Caucasus and Central Asia Political, Social and Economic Issues
Armenia: A Year at Erzeroom, and on the Frontiers of Russia, Turkey, and Persia
Robert Curzon

In series: Caucasus and Central Asia Political, Social and Economic Issues
Softcover: 978-1-53615-068-1. $95.00.

Almost from time immemorial a border warfare has been carried on between the Koordish tribes on the confines of Turkey and Persia. The governments of Turkey and Persia requested the assistance of England and Russia to draw up a treaty of peace, and to come to a distinct understanding as to where the line of border ran between the two empires. In hopes of
remedying these misfortunes, a conference was appointed at Erzeroom to discuss the position of the boundary. Robert Curzon was appointed as the English commissioner. This book originally published in 1854 describes the Curzon’s travels through this region.

**Biomes of the Caucasus: A Comprehensive Review**

*Arnold Gegechkori (Biomes of the Caucasus (BCs), Head of Biodiversity Division of Faculty of Exact and Natural Sciences, Tbilisi State University)*

In series: *Caucasus and Central Asia Political, Social and Economic Issues*

2019.

Hardcover: 978-1-53615-234-0. $320.00.

The present monograph by Dr. A M. Gegechkori – ‘Biomes of the Caucasus: A Comprehensive Review’ (about 450pp.) – is the first scientific-educational work in English on this topic. The Caucasus Isthmus between the Black and Caspian Seas (38025’ and 47015’N, 36030’ and 50020’E) is a region in the Northern Hemisphere. It covers an area of approximately 441,000km². Being a natural bridge between Europe and Asia, the Caucasus is an extraordinary crossroads in terms of its geopolitical status, cultural heritage, and biodiversity. The Caucasus is famous for having some of the richest biodiversity, making it one of the 34 most diverse and endangered biodiversity hotspots in the world. The region occurs from among the lush, broad-leaved forests along the Black Sea coastal area, to the well-expressed nival zone and the deserts of the eastern Caucasus. Flora within the Caucasus is diverse, with about 6,300 species of vascular plants, 1,600 of which are endemic and relict endemics (25.3 %). Biota of the Caucasus has always aroused the interest of scholars. Studies conducted by botanists and zoologists on the biodiversity of the Caucasus started in the beginning of the 18th century. Such research activities were relatively short-term, and based solely on either plant or animal investigations. Long-term, comprehensive (floristic, faunistic, biogeographical) studies of the wilderness of the Caucasus in all biomes and altitudinal zones, and in all vegetation seasons, were carried out by Dr G. Radde in the late 19th and early 20th centuries, and Dr A. M. Gegechkori in the second half of the 20th and early 21st centuries. In the framework of the Caucasus biota, the main target of research activity of Dr. Gegechkori (1962-2018) was psyllids (Insecta; Hemiptera; Psylloidea) – a highly indicative (bio-indicator) group for environmental research. This text aims to provide information for naturalists, concerning the biota of the Caucasus, through its biomes, and refugial areas and habitats. The work is focused on supplying a database for the current presence and distribution of many species, with an emphasis on the keystone species, the existence and range of which face major challenges and threats today, caused primarily by human’s direct and indirect activity, and global warming. The book incorporates the most recent taxonomic ranking of plants and animals species in the Caucasus, and the regularity and history of its biomes, among other topics. The monograph is also heavily illustrated with mostly original color photos, which reinforce the scientific quality of the text. This book will be of great interest to scholars of life and earth sciences and geographers. As an interdisciplinary work, the monograph provides students of all levels with valuable information on the environmental sciences, which may inspire them to pursue this topic within natural science, stimulating their research and career choices. Finally, the purpose of the work is to strengthen the readers’ awareness of the environmental challenges among the local people of the Caucasus, in light of on-going environmental changes, and the necessity of protection of this region’s natural resources.

**Middle Eastern Politics**

**Afghanistan: Legislation, Post-Taliban Governance and Troop Levels**

*William M. McNeely*

In series: *Politics and Economics of the Middle East*


For nearly two decades, Congress has shaped the U.S. approach to Afghanistan and the ongoing conflict there. Chapter 1 provides a summary of legislative proposals considered in the 115th Congress that relate to U.S. policy in Afghanistan. As reported in chapter 2, the United States, partner countries, and the Afghan government are attempting to reverse recent gains made by the resilient Taliban-led insurgency since the December 2014 transition to a smaller international mission consisting primarily of training and advising the Afghanistan National Defense and Security Forces (ANDSF). The Trump Administration is reportedly considering proposals to deploy additional ground forces to Afghanistan and somewhat broaden their mission. These forces would likely be part of the Resolute Support Mission (RSM), the ongoing NATO mission to train and support Afghan security forces as explained in chapter 3. Chapter 4 provides background information for Congress on the levels of Department of Defense (DOD) troop and contractor personnel deployed in support of prior and ongoing military operations in Iraq and Afghanistan. Chapter 5 addresses (1) what has been reported about ANDSF capabilities and capability gaps and (2) the extent to which DOD has information about the ANDSF’s ability to operate and maintain U.S.-purchased equipment.
Israel and Palestine: Background, U.S Relations and Foreign Aid

Inés DeGrasse

In series: Politics and Economics of the Middle East
Hardcover: 978-1-53616-149-6. $195.00.

Since Israel’s founding in 1948, successive U.S. Presidents and many Members of Congress have demonstrated a commitment to Israel’s security and to close U.S.-Israel cooperation. Strong bilateral ties influence U.S. policy in the Middle East, and Congress provides active oversight of the executive branch’s actions. Israel is a leading recipient of U.S. foreign aid and a frequent purchaser of major U.S. weapons systems. The Palestinians are an Arab people whose origins are in present-day Israel, the West Bank, and the Gaza Strip. Congress pays close attention—through legislation and oversight—to the Palestinians’ ongoing conflict with Israel. The current structure of Palestinian governing entities dates to 1994. In that year, Israel agreed with the Palestine Liberation Organization (PLO) to permit a Palestinian Authority (PA) to exercise limited rule over Gaza and specified areas of the West Bank, subject to overarching Israeli military administration that dates back to the 1967 Arab-Israeli War. Israel’s political impasse with the Palestinians continues. Israel has militarily occupied the West Bank since the 1967 Arab-Israeli war, with the PA exercising limited self-rule in some areas since the mid-1990s. The Trump Administration’s recognition of Jerusalem as Israel’s capital in December 2017 and its relocation of the U.S. embassy there in May 2018 were greeted warmly by Israel but rejected by Palestinians and many other international actors.

Palestine: Past and Present

Tristan Dunning (School of Historical and Philosophical Inquiry, The University of Queensland, Brisbane; School of Social Sciences, University of the Sunshine Coast, Sippy Downs, Queensland, Australia)

In series: Politics and Economics of the Middle East
2019.
Hardcover: 978-1-53616-318-6. $160.00.

The volume traces the evolution of Palestine-Israel conflict through several historically-informed and roughly chronological, yet overlapping, investigations examining, inter alia: the effects of the First World War and the efforts of the Zionist movement culminating in the establishment of the State of Israel and the expulsion of over 700,000 Palestinians from the territories therein in 1947-48; missed opportunities for peace from 1967 to 1990 by reference to official policy documents; the revitalisation of Palestinian nationalism through the PLO after the 1967 war and the establishment of the Palestinian Authority in 1994; the competing rise and evolution of Islamic nationalism in Palestine, predominantly embodied by the Islamic Resistance Movement, Hamas; attempts at Palestinian institution-building contextualised by the profound influence of international donors and Israel; and the ongoing evolution of the relationship between Hamas and Israel. The final chapter canvases some of the rapidly evolving issues that have arisen over the last few years, including upheavals caused by the election of the Trump administration in the United States, and the periodic and ongoing conflicts between Israel and Hamas in Gaza. The volume will be of interest to both scholars and the general public wishing to understand the historical and present drivers of the conflict in the Holy Land.

Qatar: Political, Economic and Social Issues

Haitham M. Alkhateeb, PhD (College of Arts and Sciences, University of Baltimore, Baltimore, Maryland, US)

In series: Politics and Economics of the Middle East
Hardcover: 978-1-53615-221-0. $320.00.

Qatar, a nation surrounded by the sea and only a sliver of land, has made it to the forefront of leading the world by example. Qatar: Political, Economic and Social Issues is organized into three main themes—political, economic and social issues—that are suitable as a reference work for advanced undergraduate and postgraduate students and scholars actively researching in this area. With this new exciting text, students will broaden their understandings of the Gulf region, acquire new skills, and gain valuable insight that will further prepare them to become more informed global citizens. Read on as Qatar undertakes deeper systemic change to realize its full potential and produce well rounded and engaged citizens who are prepared to support the nation!
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Politics of Europe

A Closer Look at Russia and its Influence in the World

Constantinos Filis (General Director, Institute of International Relations, Panteion University of Social and Political Sciences, Athens, Greece)

In series: Russian Political, Economic, and Security Issues


In 1939, Winston Churchill described Russia as “a riddle, wrapped in a mystery, inside an enigma,” distilling what an uncomprehending West feels as the “otherness” of an eccentric power. Many Westerners have but a shallow understanding of Russia. They project onto it characteristics that are not necessarily consistent with reality, or they see only part of the picture, adopting unexamined, stereotypical views. As a result, we often assess Russia on the basis of Western standards, over- or underestimating it and failing to fully understand the trends and dynamics that suprave within the country to influence its foreign policy. President Putin may not have definitively altered the face of

his country, but he did regain for it a standing and prestige disproportionate to its actual capabilities, reviving national

pride. There are opportunities as well as risks for Moscow in the post-Western world of multiple uncertainties. Putin the

pragmatist, while not in a position to proffer an alluring alternative to Western ideology, exploits every opportunity to call

into question the foundations of the existing system, which was shaped in the wake of the Second World War and serves

first and foremost the interests of the U.S. and its European allies. Russia is a revisionist power, but it carefully chooses

when, where and how it acts to further its revisionist agenda. It is manifestly more assertive in its near abroad – the post-

Soviet space – but is becoming more confident in medium-abroad regions like the Middle East, where it is filling the gap

left by Washington’s reluctance to intervene. Moscow has even begun to leave its mark on the African region. Today’s

Russia seems more comfortable communicating with authoritarian regimes worldwide and capitalises on many Westerners’

disappointment in and outrage at the policies of the Western establishment. Likewise, populists and extremists (e.g., Le Pen

in France, Salvini in Italy, Orbán in Hungary) have reached an understanding with Moscow, but we can’t tell (despite the

obvious indications) to what extent they coordinate their actions with the Kremlin. At the same time, Russia’s economy,

while not in straits as dire as some would have us believe, is not in a position to support Moscow’s ambitions and certainly

needs to be decentralised and become less dependent on exports of raw materials, investing in innovation and new

technologies. In the current volume, authors try to shed light on many factors that will define Russia’s fate and its relations

with the world. Twenty-six authors from diverse backgrounds and nine countries provide insightful answers to the

following questions: What is the identity of Putin’s Russia? How does the country’s economy influence its international

position? What are the main vectors of its foreign policy, and to what extent is this policy shaped by an underlying

ideology? What soft- and hard-power tools does it employ, and what role does energy play? How are its relations with key

global and regional players (the U.S., the EU, Germany, China, Egypt) shaped? And how and why is it asserting itself on

the regional level: in the post-Soviet space, the Middle East and the Southeast Europe?
Albania: Social, Economic, and Environmental Issues
Alaina Warner
In series: European Political, Economic, and Security Issues
Softcover: 978-1-53615-052-0. $82.00.
e-book: 978-1-53615-070-4. $82.00.
In the opening chapter of Albania: Social, Economic, and Environmental Issues, the authors analyze the impact of Albania’s European Union accession on the national constitution, the role of the judiciary branch, the organization of the executive branch and the organization of national parliament. Following this, the growth performance of a group of transition economies in the peripheral region of Southeastern Europe is assessed by examining traditional and non-traditional growth sources emerging from theoretical models. In closing, the authors examine the effect of the European Union conditionality on Roma minority inclusion in Albania from 2006–2017. Secondary data and desk research are used to assess how this affected both policy and implementation levels to ensure that European Union norms and values were transposed into Albanian legislation.

An In Depth Look at Hungary
Esperanta Rompa
In series: European Political, Economic, and Security Issues
Softcover: 978-1-53615-351-4. $82.00.
e-book: 978-1-53615-352-1. $82.00.
An In Depth Look at Hungary opens with a chapter suggesting that socio-economic inequalities are one of the most relevant barriers to healthcare access in Hungary. Some mechanisms for decision-making are studied using content-analysis according to the Hungarian health policy strategies and concepts. Next, this collection provides an overview of the Hungarian teacher education system, describing social and cultural features of the country as well the main parameters of the Hungarian education system. The authors investigate the development of irregular armed forces comprised of local citizens which were deployed in border protection. Border protection has received increased attention in modern times, particularly regarding the mountain ranges which serve as a natural defensive zone when entering the country. The concluding chapter demonstrates those instruments by which an excessively polarized society could be prevented in the near future.

Europe Since 1918
Herbert Adams Gibbons
In series: Political Science and History
e-book: 978-1-53616-154-0. $230.00.
The writer, an observer and student of European affairs for fifteen years feels that host of people are seeking an unbiased presentation of contemporary events, so that sentimentality will not obscure common sense in forming their opinion on the important problem of America’s place in the world and America’s duty toward the world. We must know how things actually are in order that we may help effectively to make them what they ought to be.

Kosovo: Past, Present and Future
Bülent Sarper Ağir (Aydın Adnan Menderes University, Aydin Faculty of Economics, Department of International Relations, Aydin, Turkey)
In series: European Political, Economic, and Security Issues
2019.
Hardcover: 978-1-53616-140-3. $160.00.
e-book: 978-1-53616-141-0. $160.00.
Balkans region has always been reminded with negative images such as war, conflict, fragmentation, ethnic cleansing and instability with reference to the “Balkanization” concept. Such a heritage resurfaced particularly during the disintegration process of the Socialist Federal Republic of Yugoslavia in which Kosovo was one of the most critical parts as an autonomous province. With the abolition of autonomous status of Kosovo, Albanians in the province resisted against Serbian rule through respectively non-military, passive resistance and parallel structures, and military means, the Kosovo Liberation Army. Tension and pressure in Kosovo led to the emergence of physical conflict and violence, and eventually North Atlantic Treaty Organization intervention on 24 March 1999. After the end of more than a five century domination of Ottoman Empire in Kosovo, it respectively became a part of Kingdom of Yugoslavia after the First World War and Socialist Yugoslavia after the Second World War. With the dissolution process of Socialist Yugoslavia, Kosovar Albanians were in search of independence as the new ‘masters’ of Kosovo. On 17 February 2008, they managed to have their ‘new born’ independent state. However, its present conditions and future should be analysed through a multidisciplinary
forming a single pan-Eu-

eral Union. The chapters in the book are written by highly renowned authorities in their respective research fields including prominent scholars, academics, and researchers. Thorough analysis of the challenges and issues currently facing the Serbian society and state encompass the fields of: • Mineral resources of Serbia including societal, economic, and environmental aspects; • Biofuels status and prospects in Serbia; • Sustainable agriculture and rural development of Serbia; • Development of innovative agriculture production technologies for linseed, glyicine, grain, and spring field crops, among others;

• Environmental concerns in Serbia including pollution sources, types of pollutants, as well as the current status, trends, prospects, and methods of pollution control; • Environmental pollution with persistent organic pollutants; • Contamination of urban soils in Serbia and their pollution status; • Environmental pollution by heavy metals and radionuclides in certain localities in Serbia. The book provides a representative account of the most important, current challenges and issues facing Serbia, on its road towards integration in the European Union. The book can serve as an authoritative source of information on the covered topics for the general public, as well as for specialists in different fields, interested in having a deeper insight into these topics.

The Bulgarians: A Forged Mélange
Yehuda Cohen, PhD (Independent Researcher, Formerly – A Postdoctoral Researcher at the Political Science Department of the Hebrew University in Jerusalem, Jerusalem, Israel)

In series: Post-Nationality in the European Union's East and North
2019.
The purpose of this series is to find the true level of national identity within the European Union, probing whether a given state nationality will prevail, whether that nationality is sufficiently stable, and, if not, whether a consolidation process, forming a single pan-European nationality, exists and can replace the state nationality system. This series clarifies the role
that each European group might play within the EU, if at all. This series about five European groups in the eastern and northern regions of Europe – the Dutch, the Poles, the Hungarians, the Bulgarians, and the Swedish – provides the reader with a fresh outlook on each of these groups. Consequently, it may shed light on the European Union and its future political and sociological prospects as it deals with typical behavioral patterns within each group, how those patterns have been created, and in what way and to what extent history has shaped that group to be unique. Each of these groups experienced foundational events that have affected its members’ motives – motives that may influence the future of the European Union. This series ties those groups’ specific histories with the overall course of European history. It specifies which motives the members of the various groups have engendered in the course of their histories and explains how those motives can be expected to affect the future of the European Union. One of the arguments put forward by this series is that the two “World Wars” were, in reality, one European civil war, albeit in conjunction with relatively marginal events outside of Europe. Thus, like other civil wars, it served as an economic catalyst for Europe and helped to shape a new pan-European national identity.

The French Revolution of 1789 as Viewed in the Light of Republican Institutions
John S. C. (John Stevens Cabot) Abbott
In series: Political Science and History
For some years the author of this work has been collecting materials for writing the history of the French Revolution. With this object in view he has visited Paris, wishing also to become familiar with the localities rendered immortal by the varied acts of this drama—the most memorable tragedy, perhaps, which has as yet been enacted upon the theatre of time.

The United States of Europe: The Global Player
Georgios I. Zekos, PhD (Aristotle University, Democritus University, University of Hull, University of Peloponnesse, TEI of Central Macedonia, Serres, Greece)
In series: European Political, Economic, and Security Issues
Hardcover: 978-1-53615-170-1. $230.00.
Europe is currently caught in a malfunction triangle between national politics, European policies, and global markets. Moreover, the democratic politics of the EU have remained national. Moreover, a single currency has been established without establishing a set of institutions to facilitate any regions of Europe to operate efficiently. The European area has been going through a lengthened period of weak economic activity and very low inflation, and there is a need to strengthen its Economic and Monetary Union, based on political stability, so as to upsurge its resilience to economic shocks. To that extent, uncertainty and political fragmentation have been amplified significantly in the aftermath of financial crises, which have been economically destructive, making crisis resolution more problematic. The crisis across Europe has led to a failure in confidence in European institutions, leading to political fragmentation of positions among Member States, and stirring up nationalistic instincts. This has impeded decision-making, averting the formation of a common growth strategy. Nevertheless, it is essential to move towards the establishment of the United States of Europe in order to avoid the collapse and disintegration of the EU.

Special Topics

A Closer Look at Grant Programs
Tabitha Reyes
In series: Government Procedures and Operations
Hardcover: 978-1-53615-995-0. $195.00.
Federal grants finance essential government programs, like infrastructure, by transferring Federal dollars to State and local governments, nonprofits, and individuals. Since the earliest days of the republic, the Federal government has used grants to advance public policy. From veterans’ assistance in the aftermath of the War of 1812 to land grants for railroads after the Civil War, federal grants have been part of our Nation’s history for a long time. Today the Federal government awards over $700 billion in grants annually. This book looks at some of the current grant programs available from the federal government.
A Closer Look at Political Communication
Mark H. Tatum
In series: Political Science and History
Softcover: 978-1-53615-321-7. $82.00.
e-book: 978-1-53615-322-4. $82.00.

Chapter one investigates how the local network media helps the key stakeholders to participate in the policy debate regarding a local low-income housing policy in Madison, Wisconsin, U.S.A., drawing mainly on Jürgen Habermas’s theory of public sphere. The second chapter discusses how coffee-houses and public reading houses are places today where political communication is often established, and the neighborhood effect is most often felt. It can be described not only as tea-coffee drinking places where free time is passed, but also as places where voter behavior begins to form and democracy is created. The authors go on to focus on the past use of racialized language as one mechanism for evaluating political communication in the 21st century. Lastly, the phenomenon of politicians employing prayer in the church as a potent political tool to subtly campaign for election and reelection in Nigeria is explored.

Agreements on Social Security between the United States and Iceland, Uruguay, and the Republic of Slovenia
Jan Kořínek
In series: Congressional Policies, Practices and Procedures
In series: Economic Issues, Problems and Perspectives
2019. 228 pp.

This book contains the Agreements on Social Security between the United States and Iceland, Uruguay and the Republic of Slovenia. The Agreements are similar in objective and content to the social security totalization agreements already in force with other leading economic partners in Europe and elsewhere, including Australia, Canada, Chile, Japan, Norway, the Republic of Korea, and Switzerland. Such bilateral agreements provide for limited coordination between the United States and foreign social security systems to eliminate dual social security coverage and taxation and to help prevent the loss of benefit protection that can occur when workers divide their careers between two countries.

Anarchies in Collision
Algis Mickunas (Ohio University, Athens, Ohio, US)
In series: Contemporary Cultural Studies
Edited by: Joseph J. Pilotta (Ohio University, Athens, Ohio, US)

The debates concerning global terrorism focus on “radical Islam” and the way it can be “moderated” or pacified by appeals to its peaceful side. These debates include the discussion of the clash of civilizations, tolerance and its limits, and military means to defeat the perpetrators. Such cultural clashes appear in various parts of the globe, including India, Pakistan, and even among sects of the same civilizations. This monograph explores the nature of these cultural clashes and the resurgence of global terror to look at a more fundamental set of issues, including the misguided search for truth, resulting in Western post-modernism and “post-truth,” spanning the globe in the guise of multi-culturalism. The analysis of this context leads to questioning the basic composition of civilizations, their compatibility, and radical differences, leading to a dimension of awareness that has not been addressed by scholars studying civilizations. What is at issue is the inevitable “anarchistic terror,” which includes most unpredictable acts by “unsuspected” individuals, not only from Islam, but also by those emboldened by a specific mode of awareness. This level “dissolves” the various claims that the fundamental clash is among civilizations and points to two, modern, Western levels of this dissolution: literature and theory. The former calls for the collapse of anything resembling features of the world that are accessible to human awareness. The second level places the world at an arbitrary service for human “needs.” The result is made manifest by the claims from anarchistic terrorists that the modern West is “Satanic” and destructive of the created order of all things, which is a totally anarchistic point of view, while the answer from the modern West points to the fundamental anarchism of those who terrorize “Western” ways. The analysis of this context shows that both sides are anarchistic and face an inevitable collision without any possible justification. The collision is designed to unfold into a final domain that requires an “ontological” account of how such a collision in human life is possible, without relying on previously inadequate explanations. The text includes contemporary “turmoil” in global relationships, the various trends toward “autocracy” and “strong man” solutions to our predicaments. Such tendencies appear in the phenomenon of the conjunction of state and religion, so well pronounced in Russia, in Confucian China, the Middle East, the United States, and in European nations. It is to be noted that such solutions do not depend only on personality cults, but above all, on “legitimating” their stories. The point is that such stories are equally anarchistic.
Disciplines of the City: New Forms of Governance in Today’s Postmetropolises
Julia Urabayen (Universidad de Navarra, Pamplona, Spain) and Jorge León Casero (Universidad de Zaragoza, Zaragoza, Spain)
In series: Political Science and History
Softcover: 978-1-53615-256-2. $95.00.
During the past two decades, cities have become nerve centers for the production of value. Connected in real time by means of a vast infrastructure network, their productive dynamic has surpassed the organizational and management capabilities of territorially limited States, which are dependent on the international financial flow of capital moving across them. Given that cities are truly the biopolitical factories of the 21st century, the job functions of an urban planner are now identified with those of a highly placed manager in charge of a company's R+D+i, and the mode of governance applied to these is different from that used during previous, historic stages. From different viewpoints (Philosophy, Law, Architecture, and Engineering), this book offers an analysis of the main changes which have taken place in the way cities function. Among other issues, it looks at the management styles applied by public administrations to public spaces (David Thunder; Jorge León, Enrique Cano, and José María Castejón), and the new manner in which social (Julia Urabayen) and legal – public (Adriana Ruiz and Alejandro Gómez) and private (Felipe Schwember) – segregation is generated. It also looks at the new sociopolitical uses that city inhabitants have given to common spaces beyond the dichotomy of private and public space (Jonas Holst; Carlos Cámara). In other words, the chapters included in this book are not an historical approach to the city, but a theoretical reflection on the disciplines that define our post-metropolitan cities. The aim of the book is to understand how cities and the disciplines that are used to make them work function nowadays: governance, politics, and technology. The cities of the 21st century are no longer places where people can live freely (as Weber stated in The City), but spaces divided in at least two different areas: those who have access to ICT and those who do not have that technology, those who live in healthy and safe boroughs, and those who live in poor and unhealthy areas. This book ponders those problems and tries to show how the disciplinarians of the city deal with them.

Firefighter Assistance Grants and Funding
Gregory Krueger
In series: Congressional Policies, Practices and Procedures
In series: Safety and Risk in Society
e-book: 978-1-53615-700-0. $160.00.
Public fire departments in the U.S. responded to almost 1.3 million fires in the United States in 2014. To help support local firefighting efforts, the Federal Emergency Management Agency (FEMA), allocated almost $5.8 billion from 2009 to 2016 to award grants to fire departments and other organizations for equipment, staffing, research, and other needs. The FEMA’s Grant Programs Directorate (GPD) revised fire grant policies for the Assistance to Firefighters Grant (AFG), Staffing for Adequate Fire and Emergency Response (SAFER), and Fire Prevention and Safety (FP&S) grant programs in response to the Fire Grants Reauthorization Act of 2012 (FGRA).

Foreign Policy and Regional Affairs: Background, Issues and Frequently Asked Questions
Ramiro Carpenter
In series: American Political, Economic, and Security Issues
In series: Government Procedures and Operations
Hardcover: 978-1-53615-416-0. $160.00.
This book is a compilation of CRS (Congressional Research Services) reports on Foreign Policy and Regional Affairs. The first chapter is a 58-page report including frequently asked questions on US Trade Policy. The second report provides an overview and issues on International Trade and Finance for Congress. Next, an introduction, background and leadership selection process is provided for selecting the World Bank President. The subsequent reports are focused on the global refugee resettlement and the current refugee crisis, the appropriations and authorization laws for foreign aid, the Global Compact on Migration (GCM) and US Policy, and finally, an examination of human trafficking and foreign policy.
Issues Facing the United States Secret Service  
**Peter E. Baldwin**

In series: *American Political, Economic, and Security Issues*  
Hardcover: 978-1-53615-593-8. $195.00.  
Chapter 1 examines how the United States Secret Service can more effectively achieve its mission of protecting the Nation’s leaders and financial systems. This hearing will address agency staffing, recruitment, and morale improvement efforts as well as agency challenges, such as resource constraints and misconduct. The U.S. Secret Service (Secret Service) vets individuals differently depending on the person’s expected proximity to the President when he travels, including during his visits to Mar-a-Lago. Chapter 2 provides information on, among other things; the vetting of individuals expected to be near the President; efforts to establish secure areas for handling classified information; and regulations and processes for agency expenditures on employees who travel with the President. It is estimated that federal agencies incurred costs of about $13.6 million for the President’s four trips to Mar-a-Lago from February 3 through March 5, 2017. Chapter 3 examines (1) the costs incurred by federal agencies associated with the President’s travel on selected trips to Mar-a-Lago, (2) the costs incurred by federal agencies associated with certain overseas trips taken by Donald Trump, Jr. and Eric Trump, and (3) the extent to which the Coast Guard, the Secret Service, and DOD have reported their costs pursuant to the Presidential Protection Assistance Act of 1976. Chapter 4 is an amendment to the Overtime Pay for Protective Services Act of 2016. It extends the Secret Service overtime pay exception through 2019. Chapter 5 is a copy of the Secret Service Recruitment and Retention Act of 2018 Chapter 6 reviews the Secret Service’s oversight of its IT portfolio and workforce. This chapter discusses the extent to which the (1) CIO implemented selected IT oversight responsibilities, (2) Secret Service implemented leading IT workforce planning and management practices, and (3) Secret Service and DHS implemented selected performance monitoring practices for IITT.

Latin America: Background and U.S. Relations  
**Antonia Perez**

In series: *Latin American Political, Economic, and Security Issues*  
e-book: 978-1-53615-180-0. $230.00.  
Geographic proximity has ensured strong linkages between the United States and Latin America and the Caribbean, based on diverse U.S. interests, including economic, political, and security concerns. The United States is a major trading partner and the largest source of foreign investment for many countries in the region, with free-trade agreements enhancing economic linkages with 11 countries. The region is a large source of U.S. immigration, both legal and illegal; proximity and economic and security conditions are major factors driving migration. The United States provides foreign assistance to the nations of Latin America and the Caribbean to support development and other U.S. objectives. U.S. policymakers have emphasized different strategic interests in the region at different times.

Mexico: Economic, Political and Social Issues  
**Terence Saunders**

In series: *Latin American Political, Economic, and Security Issues*  
Hardcover: 978-1-53615-183-1. $230.00.  
The United States has maintained significant interest in Mexico, an ally and top trade partner. In recent decades, U.S.-Mexican relations have grown closer through cooperative management of the 2,000-mile border, the North American Free Trade Agreement (NAFTA), and security and rule of law cooperation under the Mérida Initiative. Relations have been tested, however, by President Donald J. Trump’s shifts in U.S. immigration and trade policies. This book provides an overview of political and economic conditions in Mexico, followed by assessments of selected issues of congressional interest in Mexico: security and foreign aid, trade, immigration, organized crime, violence and water issues.

Neoliberalism: Perspectives, History and Criticisms  
**Travis Graham**

In series: *Economic Issues, Problems and Perspectives*  
Softcover: 978-1-53616-014-7. $82.00.  
e-book: 978-1-53616-015-4. $82.00.  
There are various ways to understand neo-liberalism, including through the economy, politics, education, and globalization. In Neoliberalism: Perspectives, History and Criticisms, these topics will play a role in articulating the much-debated issue of the widening gaps between the rich and the poor, the left and the right, democracy and autocracy, and the educated and left behind. The subsequent study uses data on neoliberal discourses and practices in higher educational institutions in Ghana in order to situate neoliberalism in a historical framework, as well as examine its perception in
Universities. The closing chapter explores the possibility of transitioning from isolated monoliths of oligopolies into an ecosystem of a modular economy that is based on small or medium, competitive, community friendly and flexible enterprises.

**Puerto Rico: Recovery, Economic and Political Issues**  
*Miroslav Malát*

In series: *Central America and the Caribbean*


Puerto Rico lies approximately 1,000 miles southeast of Miami and 1,500 miles from Washington, DC. Despite being far outside the continental United States, the island has played a significant role in American politics and policy since the United States acquired Puerto Rico from Spain in 1898. On September 20, 2017, Hurricane Maria made landfall in Puerto Rico as a Category 4 storm with sustained wind speeds of over 155 miles per hour. At that time, the Commonwealth of Puerto Rico was already in recovery mode following the glancing blow struck by Hurricane Irma on September 6, 2017, which left 70% of electricity customers without power. Chapter 1 deals with the challenges to recovery in Puerto Rico and the role of the Financial Oversight and Management Board. Even before the 2017 hurricane season, Puerto Rico’s electric power infrastructure was known to be in poor condition, due largely to underinvestment and the perceived poor maintenance practices of the Puerto Rico Electric Power Authority (PREPA). Chapter 2 focuses on the recovery of Puerto Rico from the hurricanes, and the restoration of power. The two hurricanes that hit may have been historic, but they exposed a state of affairs in Puerto Rico that existed well before any of the hurricanes made landfall. Decades of mismanagement led to a paralyzing debt burden. Chapter 3 describes the factors that contributed to Puerto Rico’s financial condition and levels of debt and federal actions that could address these factors. Chapter 4 examines the economic conditions in Puerto Rico as of the end of 2016, and (2) assesses the potential effects of applying the 2016 Overtime Rule to Puerto Rico. Chapter 5 provides policy and historical background about Puerto Rico’s political status—referring to the relationship between the federal government and a territorial one. Congress has not altered the island’s status since 1952, when it approved a territorial constitution.

**Russia's Policy in the Caspian Region**  
*Sergey Zhiltsov (Professor of Post-Soviet Foreign Policy, Head of the Department of Political Science and Political Philosophy, Diplomatic Academy of the Ministry of Foreign Ministry, Russian Federation in Moscow)*

In series: *Russian Political, Economic, and Security Issues*  

This book investigates the policy of Russia on the Caspian and in the nearby territories from old times to the beginning of the present millennium, thus, spanning several centuries. The book also discusses the motivations of the rulers of Rus’, Moscow State, Russian Empire, the USSR and later on, Russia that pursued active foreign policy targeted to extension of the geopolitical influence and strengthening of the economic presence in the near-Caspian territories and on the Caspian Sea proper. The main stages of formation of the Russian foreign policy are studied. The causes underlying the rivalry of Russia with Persia and Turkey, Central Asian Khanates and European states for the leading positions on the Caspian are analyzed. The authors describe the mechanisms used by Russia in its foreign policy with regard to the established political and economic conditions. Much attention is focused on the analysis of Russia’s foreign policy in the Caspian region after disintegration of the USSR when the situation on the Caspian had changed drastically. Formerly there were two Caspian states—USSR and Iran, but now three new independent states appeared, i.e. Kazakhstan, Azerbaijan and Turkmenistan, which immediately became the focus of interest of non-regional states and leading oil and gas companies. This book describes how the policy of Russia has been changing in the face of a new geopolitical situation in the Caspian region. The approaches of Russia to addressing the regional problems, first of all, the international legal status of the Caspian Sea, hydrocarbon production and transportation, militarization and ecology, etc. are analyzed. All these factors urged Russia to develop new approaches towards the Caspian region. The book investigates the effect of the foreign policy of new Caspian states, the USA, EU and China on the Caspian policy of Russia. The complicated geopolitical situation on the Caspian and unceasing attention to its hydrocarbon resources force Russia to keep a close watch on the Caspian region that remains the main vector of the Russian foreign policy.
Teresa Rodrigues (Portuguese Institute of International Relations (IPRI) – NOVA University, Lisbon, Portugal) and André Inácio (Portuguese Institute of International Relations (IPRI) – NOVA University, Lisbon, Portugal)

In series: Defense, Security and Strategies
Hardcover: 978-1-53615-331-6, $230.00.

In a globalized world, the international economic crisis that started in 2008 has led to structural changes in the international system and in the balance of power: from a unipolar to a multipolar sphere; from the ‘post-modern state’ to the ‘sovereign state’; from unrestricted integration in the global economy to the independent management of the economy itself; and, from trade integration at a global level to the fragmentation of the economic space in regional areas. In short, the transition from a unipolar to a multipolar trend seems to be reflected in the increasing fragmentation of the economic space and has repercussions in the strategic space and security. These changes are also affecting the ‘discourse’ that explains the process of globalization and the appropriate strategies to act on it. Until 2007 one could talk about a “Western model.” But now this is a lot more questionable, and we might even talk of an outright censorship. The rise of emerging powers leads to the construction of a new ‘narrative’ adapted to the values that these countries embody, among them the strength and suitability to the principles derived from the sovereign state. A scenario where it is increasingly difficult to adopt the tenets of globalizing governance. Our aim is to provide an overview of all these structural transformations and assess those changes in the different areas taken into account in this book. We also aim to address possible alternatives, which may allow a coordinated management of certain risks, although regionally differentiated. Armed Forces and other security services, as well as decision-makers in the areas of economics, social and security public policies and other readers can find in this book an overview of some major contemporary challenges, resulting from the link between security and the globalization process. We hope this book can be useful to the academic community, both graduate and post-graduate students, professors and researchers of International Relations and Political Science.

South America: Background, U.S. Relations and Issues for Congress
Michael D. Cammell

In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-53615-276-0, $230.00.

The reports that make up this book examine South American issues that impact on the United States. Chapter 1 provides background on the political and economic situation in Argentina and U.S.-Argentine relations. A key U.S. ally in the Latin American region, Colombia endured an internal armed conflict for half a century. In the late 1990s, the Colombian government devised a new security strategy, known as Plan Colombia, to counter the insurgencies. Originally designed as a 6-year program, Plan Colombia ultimately became a 17-year U.S.-Colombian bilateral effort as described in chapter 2. The U.S.-Colombia Trade Promotion Agreement entered into force on May 15, 2012. Chapter 3 summarizes several key provisions in the original agreement text. Chapter 4 examines how Colombia’s drug policies have evolved in light of Colombia’s peace agreement with the FARC and its changing counternarcotics policy. It explores both policy and oversight concerns, such as: prospects for reducing coca and poppy cultivation under Colombia’s new drug policy and the peace accord with the FARC; the role of Colombian drug trafficking organizations, including powerful criminal groups containing former paramilitaries, in a post-peace accord environment; U.S.-Colombian cooperation on counternarcotics and Colombia’s future role in regional antidrug efforts; and shifts in U.S. government assistance to support Colombia’s revised drug policy and how Colombia’s new policy converges with traditional U.S. priorities. Chapter 5 examines the political and economic conditions in Ecuador and U.S.-Ecuadorian relations U.S.-Paraguayan relations have been close for decades. The U.S. government has provided development assistance to Paraguay, and the two governments have collaborated on security, counternarcotics, and efforts to promote and strengthen democracy, as reported in chapter 6. The United States historically had close relations with Venezuela, a major U.S. oil supplier, but relations have deteriorated under the Chávez and Maduro governments. Chapter 7 provides information on U.S. concerns about the deterioration of human rights and democracy in Venezuela and the lack of bilateral cooperation on counternarcotics and counterterrorism efforts. Chapter 8 analyzes the economic crisis in Venezuela, arguably the most acute crisis in the global economy today, including the causes, policy responses by the government, and recent developments. The chapter also examines how the crisis affects U.S. economic interests. Chapter 9 provides background on political and economic developments in Venezuela, U.S. policy, and U.S. legislative action and initiatives from 2013 to 2016 covering the 113th and 114th Congresses.
Top 5 Reports and Testimonies in July 2018
Judith J. Martin
In series: Congressional Policies, Practices and Procedures
In series: Laws and Legislation
This book is a compilation of significant reports and testimonies issued in July 2018.

Top 5 Reports and Testimonies in June 2018
Dania Bijma
In series: Congressional Policies, Practices and Procedures
In series: Laws and Legislation
This book is a compilation of significant reports and testimonies issued in June 2018.

Top 5 Reports and Testimonies in October 2018
Mette Aden
In series: Congressional Policies, Practices and Procedures
In series: Laws and Legislation
This book is a compilation of significant reports and testimonies issued in October 2018.

Venezuela in Focus: Economic, Political and Social Issues
Matthew S. Bisson
In series: Latin American Political, Economic, and Security Issues
2020.
Softcover: 978-1-53616-503-6. $82.00.
e-book: 978-1-53616-504-3. $82.00.
Excessive consumption of calories, too much fat, and too little fiber in western regions such as Latin America have caused a range of twentieth-century diseases like modern malnutrition and metabolic syndrome. The study of these diseases has found relationships between the lipid fractions found in blood plasma and the individual’s food consumption. As such, Venezuela in Focus: Economic, Political and Social Issues relates some biochemical markers and some lipid fractions with the frequency of nutritional consumption in subjects belonging to the F.A.C.Y.T. community. Next, a study is presented with the aim of exploring A-I and B100, as well as their relationship with some lipidic fractions and biochemical markers in adults with and without metabolic syndrome belonging to a community in a Venezuelan university. The authors discuss how Venezuelan authorities, after examining the possibilities offered by cryptocurrencies, developed their own project, the Petro, while facing increasing economic and financial pressure at the start of 2018 compounded by sanctions from Western states and internal instability. The Petro was devised as a new lifeline to reengage Venezuela with the global financial system despite significant pressures from Washington. The purpose of the closing study is to explore, from 1960 up to 2018, the dynamics of talent loss in the Venezuelan academic community of researchers. During this 58 year period, 2,235 members of that community left the country, and in the last 20 years, 84% of them went.

SOCIAL AND BEHAVIORAL SCIENCES

Adolescence and Youth

Understanding Early Adolescence: Perspectives, Behavior and Gender Differences
Felicien Martin
In series: Family Issues in the 21st Century
Softcover: 978-1-53615-105-3. $82.00.
e-book: 978-1-53615-106-0. $82.00.
Adolescence is an important period in life in which a series of structural, physiological, hormonal and social changes take place. Some characteristics of this period are impulsive behavior, inadequate decision-making, and increased incidence of risky behaviors. For these reasons, Understanding Early Adolescence: Perspectives, Behavior and Gender Differences discusses how studying behavioral regulation and environmental adaptation skills is of great importance. The authors research developmental differences in effortful control, sensation seeking and risk-taking behavior between adolescents and young adults. Additionally, gender and socioeconomic status differences in all three variables were investigated.

**Aging**

**Social Security: Benefits and Special Programs**
*Orville Copeland*

In series: *American Political, Economic, and Security Issues*  
Social Security is a self-financing program that provides monthly cash benefits to retired or disabled workers and their family members and to the family members of deceased workers. Workers become eligible for Social Security benefits for themselves and their family members by working in Social Security-covered employment. Social Security is of ongoing interest both because of its role in supporting a large portion of the population and because of its long-term financial imbalance. The Social Security benefits that are paid to worker beneficiaries and to workers’ dependents and survivors are based on workers’ past earnings. Retired worker benefits can be affected by other adjustments, for example, the windfall elimination provision.

**Anthropology**

**Our Animal Condition and Social Construction**
*Jorge A. Colombo, M.D., Ph.D.*  
(Director Emérito, Unidad de Neurobiología Aplicada, Investigador Principal (CONICET), Cdad. Buenos Aires, Argentina)

In series: *Human Evolution, Biological and Cultural Domains*  
Softcover: 978-1-53615-357-6. $95.00.  
Our species origin has its roots in ancestral habits, behaviors and survival drive, through changing environmental conditions, and crystallized during millennia in basic neurobehavioral circuits, be it as predators or potential prey: we were not born in a mother-of-pearl cradle and protected by magic agents. Placed on the thread of time, modern cultural contexts – norms, priorities, values – appear as “newly born”. This biocultural interaction and “dystopia” carved our identity, genetic expression and the possible origin of beliefs, resulting in an arch of possible behaviors and cultural phenotypes. This book offers evidence – as a way to acquire conscience – of evolutive grounds and socio-cultural ecology upon which our brain organization and behavioral constructs derived. Among those, shared basic behavioral drives with non-human primates. The biological nature of our construction drags millennia of species trials with variable rates of survival times. They provide traces of a variable and multiple evolutive chains. The emergence of humans with a sophisticated language allowed the development of complex virtual constructs based on symbolism and the instruments of culture, which has enhanced cognitive capacity and emotional interaction supported by processes anchored in neural networks distributed within cortical and subcortical levels. Basic, essential neural connectivities were preserved during the evolutionary development of the species. Which and how much of our current drives – individually and as a global community – are driven by ancestral, inherited traits imprinted in our animal condition? This issue pertains to our identity as a species, our social constructions, and ecological interaction. The biological (animal) matrix and inheritance are usually segregated from the social and cultural construction. Although sophistication of our cultural development tends to “set up a divisive fault” from our animal condition, primitive foundations of non-human animal behavior (survival, territory, reproduction, prevalence, access to nutrients) are basic processes and underlie essential individual and group basic drives and cultural constructs. Humans have not ceased from being territorial (whether applied to virtual or material dimensions). In our time and through human history various forms of social inequities were expressed. On evolutive terms, the notion of individual “social status” within the social structure (rights, priorities) in a gregarious community with hierarchical organization, generated the probability of an individual ascending or descending the hierarchy within the said organization: the potential figure of leader or the subordinate or marginalized. Is there an evolutive antecedent for human social inequities? How to construct a different future? Postindustrial societies became increasingly dependent on material consumerism and technological cultures to the point of “embraining” them, conceptually becoming technological hybrids. It represents a developmental “must” or an uncontrolled “spin-off” of human
inventiveness, affecting our future? It ought to be taken conscience of, at the social and political level. Construction of supernatural agents played a significant role in socialization/domestication processes. Agents with intentionality flourished through altered states of conscience or under fear from natural phenomena, or attributed to supposed inhabitants of the Natural Kingdom or virtual beings. This imaginary universe, reinforced by ritual behaviors, contributed to control personal/collective distress of various possible origins, and conditioned our “degrees of emotional and cognitive freedom”.

**Architecture**

**History of Sculpture, Painting, and Architecture**
*John Smith Memes, LL. D*

In series: *Fine Arts, Music and Literature*

History of Sculpture, Painting, and Architecture is offered, under the impression that the general cultivation of practical taste, and an acquaintance with the principles of the Fine Arts, are not only desirable in the light of acquirement, but must eventually prove highly beneficial to the useful arts of the country.

**The Architecture of Colonial America**

*Author: Harold Donaldson Eberlein*

*Illustrator: Mary H. Northend*

In series: *American History, Culture and Literature*
Hardcover: 978-1-53615-878-6. $160.00.

The Architecture of Colonial America sets forth a brief history and an analysis of the architecture of Colonial America, in such a way that they may be of interest and value both to the general reader and to the architect. Architecture is crystallised history. Not only does it represent the life of the past in visible and enduring form, but it also represents one of the most agreeable sides of man’s creative activity. Furthermore, if we read a little between the lines, the buildings of former days tell us what manner of men and women lived in them.

**Child Safety**

**Child Welfare Services : Background, Funding and Foster Care**
*Arielle Tatienne*

In series: *Social Welfare Policies and Programs - Patterns, Implications and Prospects*
2019.
Hardcover: 978-1-53616-360-5. $230.00.

Child welfare services are intended to prevent the abuse or neglect of children; ensure that children have safe, permanent homes; and promote the well-being of children and their families. Federal support for child welfare activities is provided via multiple programs. The largest share of this federal child welfare funding is provided for support of children in foster care, and for ongoing assistance to children who leave foster care for new permanent families (via adoption or legal kinship guardianship). This book begins with an overview of appropriations activities for child welfare programs. It then includes a discussion of how annual funding levels are determined for child welfare programs and briefly discusses the effect of sequestration on that child welfare funding. The remainder, and largest part, of the book provides descriptions of each federal child welfare program.

**Children's Rights: Global Perspectives, Challenges and Issues of the 21st Century**
*Samuel M. Lange*

In series: *Family Issues in the 21st Century*
Softcover: 978-1-53615-565-5. $82.00.
e-book: 978-1-53615-566-2. $82.00.

The opening chapter of Children’s Rights: Global Perspectives, Challenges and Issues of the 21st Century argues that an alternative praxis, one that honours constructivist and post humanist theoretical approaches to teaching and learning, is a rights-based praxis. This approach takes as its foundational assumption the contention that programmes and services have a responsibility to ensure the rights of children and their families are met. Chapter two is dedicated to children’s views about their participation rights in school. It analyses what five-year-old children from Scotland and Greece said about a teacher-
centred school for them. The author in the closing chapter explores how Russian child rights-oriented NGOs supported by domestic state actors and partners from abroad advocate a child welfare reform.

School Violence: Risk Factors, Prevention and Challenges
Inero Valbuena Ancho, Ph.D. and Krizna Rei Palces, Ph.D. (College of Graduate Studies and Teacher Education Research, Philippine Normal University, Manila, Philippines)
In series: Bullying and Victimization
Hardcover: 978-1-53615-834-2. $160.00.
This book attempts to uncover school violence in different contexts by presenting studies of expert practitioners, which highlight concepts, risk factors, prevention mechanisms and challenges faced by concerned individuals in the hope of developing solutions to the occurrence of violence involving school children. Studies included in this book are those of international and national scope, stakeholder involvement, and even the role of new technologies in light of school violence.

Communication and Media Studies

Activism, Campaigning and Political Discourse on Twitter
Inoent Chiluwa (Department of Languages & General Studies, Covenant University, OTA, Nigeria) and Gwen Bouvier (Department of Media Studies, Maynooth University, Ireland)
In series: Media and Communications - Technologies, Policies and Challenges
Social media has increasingly become a strong factor that shapes how we communicate social and political ideas. It has been argued that Twitter and other social media channels empower voices that were previously marginalized, help hold governments accountable, and provide opportunities for individuals to network and campaign to achieve social and political reforms. In this collection of chapters, authors from different academic disciplines, coming from different social and political backgrounds and experiences, have explored the increasing transformative potentials of Twitter for group advocacy. The chapters further illustrate how Twitter serves as a forum for spreading awareness and information on social events, as well as for social activism and political discourse. Some of the topics explored include Understanding the potential of Twitter for political activism; Digital Trump and conflict: A multi-method analysis; The use of Twitter as complementary press on the disappearance of the Malaysia Airlines Flight MH370; Constructing transnational identity through Twitter activism: A discourse study of #FGM; LGBT social media activism in India; Online activism in Mali: a study of digital discourses of the Movement for the Liberation of Azawad; Sousveillance Twitter: activists’ pro-democracy governance from below in Middle East; Twitter’s ethics of freedom in the aftermath of November 2015 Paris attacks through the lens of the anonymous collective, etc. This collection of chapters written by experts, and budding academics from different disciplines, will be an invaluable handbook and can serve as a resource material for students, scholars and practitioners of Communication, Political Science and International Relations, Law, Linguistics, Journalism and Media Studies.

Communication Studies

Introduction to Communication Sciences
S. R. Savithri, PhD (Former Director, All India Institute of Speech and Hearing, Manasagangotri, Mysore, Karnataka, India)
In series: Research Advances in Communication Studies
2019.
The main theme of the book Introduction to Communication Sciences is to provide information on (a) communication, language, speech & their components in brief with illustrations, (b) production, characteristics and generation of sound in
The unfavorable image of Iranian people. Also, we can see that historical events like Hostage Crisis have left a negative effect on American citizens across 50 American states. The results show clearly the negative role of American media in creating an unfavorable image of Iranian people. Also, we can see that historical events like Hostage Crisis have left a negative effect on American citizens across 50 American states. The results show clearly the negative role of American media in creating an unfavorable image of Iranian people.

Heisey (2009), the book presents a framework for analysis and then it goes on to discuss the historical relationship between these countries. It incorporates definitions of speech, language, communication, and their components, functions of communication, normal development of speech & language, pre-requisites and factors affecting speech-language development, cultural and linguistic issues in communication; bi/multilingual issues. It addresses overview of speech production, speech mechanism, the acoustic theory of speech production, and bases of speech and language. In addition, the book focuses on acoustic energy and power, absolute and relative units and measurements. Bel and deciBel, sound pressure and decibel sound pressure levels, and characteristics and application of decibels. Hearing mechanism, audibility and hearing is also dealt with along with hearing range, procedures of estimating minimum audible levels, minimum audible pressure and field, reference equivalent threshold sound pressure levels and hearing levels, and other related issues. Finally, it introduces the historical aspects of the field of Speech-Language Pathology and Audiology. The work of these missionaries, particularly in the field of education, changed the history of Iran forever. Also, missionaries provided the scene for the establishment of the first American legation in Iran. Therefore, in this book the historical relationship between these countries is depicted from before a time of formal relationships to present day. Through the introduction of the concept of cross cultural schemata by Shahghasemi and Heisey (2009), the book presents a framework for analysis and then it goes on to present results of a study on 1,752 American citizens across 50 American states. The results show clearly the negative role of American media in creating an unfavorable image of Iranian people. Also, we can see that historical events like Hostage Crisis have left a negative effect on American citizens across 50 American states. The results show clearly the negative role of American media in creating an unfavorable image of Iranian people.
on Americans’ perception of Iranians. Conversely, American citizens who knew an Iranian citizen in person have shown much more positive perceptions about Iranian people.

The Glory That Was Greece: A Survey of Hellenic Culture and Civilization
J. C. Stobart
In series: Focus on Civilizations and Cultures
Hardcover: 978-1-53616-109-0. $230.00.
“Greece” and “Greek” mean different things to different people. The historian, of course, will inform us that all Western civilisation has Greece for its mother. The author aims to throw some fresh light upon the secret of that people’s greatness. It cannot be done by studying their history only. This book looks at the literature, statues and temples, their coins, vases, and pictures, their laws and governments, their ceremonies and amusements, their philosophy and religion.

Urban and Rural Poverty: Prevalence, Reduction Strategies and Challenges
Dina Oortwijn
In series: Hunger and Poverty: Causes, Impacts and Eradication
Softcover: 978-1-53615-610-2. $82.00.
e-book: 978-1-53615-611-9. $82.00.
Urban and Rural Poverty: Prevalence, Reduction Strategies and Challenges opens with a review of urban poverty in Bangladesh, analysing socioeconomic aspects of the marginal poor under three headings: migration and the urban poor, household characteristics, and neighborhood characteristics. Next, the authors investigate the extent of poverty in rural and urban Nigeria between 2004 and 2010. They examines the contributions of growth and redistribution factors to changes in poverty within the two sectors. The analysis was based on the National Living Standard Survey data of 2004 and 2009/2010 sourced from the National Bureau of Statistics and analysed using Shapley decomposition approach. This collection also examines how the socioeconomic characteristics of households influence rural poverty. The data for the study was extracted from the revised Nigerian General Household Survey data from 2010-2011, and a logistic regression technique was used to analyse said data. The authors argue that the improvement of rural access in developing countries is essential for the success of sustainable development goals, since poor access is one of the major causes of rural poverty and hampers rural development. The concluding chapter describes the experiences from a research project on modern logistic chains in the Mount Kenya region, demonstrating how small scale farmers organized, how important infrastructures such as rural roads, grading sheds and cooling devices were, as well as intermediate means of transport in combination with modern cooling logistics and communication technologies.

African and African-American Studies

Contemporary Black Thinkers in the Diaspora and Their Conceptualizations of Africa
Abdul Karim Bangura (Center for Global Peace, American University, Washington, DC, US)
In series: African Studies
2019.
The undergirding postulate of this book is that Afrocentricity and other ideas birthed by major contemporary Black thinkers in the Diaspora, which have given rise to the Africanist Perspective on the Motherland to place Africa at the center of all intellectual discourses pertaining to African people everywhere, while at the same time challenging the pervasive and pernicious Eurocentric myth of African people being inactive agents in history, are wellsprings for helping to build a new Africa. The chapters that comprise this book were presented as part of a colloquia series titled “Conceptualizations of Africa by Major Black Diaspora Thinkers: Delineating Ideas for Building a New Africa” presented at the African Studies and Research Forum’s 22nd Annual Conference that took place at the University of West Georgia, Carrollton, Georgia in March of 2018.

Early Black Thinkers in the Diaspora and Their Conceptualizations of Africa
Abdul Karim Bangura
In series: African Studies
2019.
Hardcover: 978-1-53614-859-6. $195.00.
The major argument in this book is as follows: Just as the ideas of Pan-Africanism, birthed by Henry Sylvester-Williams and others in the late 1800s, and Negritude, ushered by Aimé Césaire and others in the early 1900s (most of these major Black thinkers being in the Diaspora), that emboldened many major Black thinkers on the Motherland to push for
independence across the continent, so will these early thinkers’ ideas help in the building of a new Africa. The various chapters for this book are the outgrowth of a colloquia series titled “Conceptualizations of Africa by Major Black Diaspora Thinkers: Delineating Ideas for Building a New Africa” presented at the 22nd Annual Conference of the African Studies and Research Forum which convened at the University of West Georgia, Carrollton, Georgia in March of 2018.

**General Race and Ethnicity**

*Race and Ethnicity: International Perspectives, Challenges and Issues of the 21st Century*

*Sylvia Rivera*

*In series: Social Issues, Justice and Status*

2020.

Hardcover: 978-1-53616-430-5. $230.00.

Race and Ethnicity: International Perspectives, Challenges and Issues of the 21st Century first builds off the existing multicultural attachment literature to explore the concept of contextual and developmental adaptations of attachment bonds as it intersects with therapists’ expectations for immigrant families living in the United States. Next, the authors use pooled data from the 2004-2007 National Election Survey to assess how race, class, and ethnic perspectives account for middle-class Mexican Americans’ support for a fundamental dimension of crime control ideology, namely, whether crime should be eradicated along a continuum from conservative-punitive to liberal-preventive measures. The association of in-school bullying with suicidal behavior in school-aged youth, with a specific interest in African American adolescents is examined, in addition to protective factors against suicidal behavior in adolescents. The cross-racial interaction of learners in a former “whites only” high school in South Africa is explored in an effort to understand their day-to-day life over a period of six months. Data were obtained from several sources including interviews with students, teachers, and administrators, focus group discussions, and observations.

**Women’s Studies**

*Exploring the Opportunity and Challenges of Women in India*

*Surendra Bhaskar (Savior Educational Welfare and Awareness, Samiti, Ghassu, Sikar, India)*

*In series: India: Economic, Political and Social Issues*

2020.

Softcover: 978-1-53616-424-4. $95.00.
e-book: 978-1-53616-425-1. $95.00.

As everyone knows, on the one hand, women in India walk shoulder to shoulder with men, whereas, on the other hand, this half of the population is struggling to get their due rights even after more than seven decades of India’s independence. The Nova Publication is proud to publish this book titled “Exploring the Opportunity and Challenges of Women in India”. The title of this book itself reflects its gravity and importance. The wide range of issues related to women that this book covers makes it a must-read for women, students, research scholars, academicians, politicians, competitive examination aspirants and general readers who are keenly interested in augmenting their knowledge regarding various aspects of women in the largest democracy in the world where the women are still finding it difficult to get their share of representation even after the recently concluding the 17th General Elections in the independent nation. The authors have done independent and detailed research on every aspect related to women starting from present social conditions of women to political representation, financial independence, women empowerment, challenges and opportunities in historically patriarchal society, role of women in governance, women’s rights and problems being faced by both working and home-maker women. By reading this book, the readers will come to know about issues that have been left unaddressed for decades, and will then get deep insight about the present condition of half the population of India. This book will help the policy-makers and stakeholders to draw an action plan to ensure equality, social, legal and constitutional rights for women. The authors are continuously researching to bring other unaddressed issues concerning women to our readers. The Nova Publication promises that we will keep highlighting every latest development related to the rights, roles and representation of this 50% population of India in our subsequent publications until the time when 100% equality for women is achieved. The best part of the book is that the authors have written the chapters in an extremely lucid language which is easy to understand and grasp.
The Suffragette: The History of the Women's Militant Suffrage Movement 1905-1910
E. Sylvia Pankhurst
In series: Women's Issues
In series: Political Science and History
Hardcover: 978-1-53615-517-4. $230.00.
In 1903, Emmeline Pankhurst founded the Women's Social and Political Union, a militant organization dedicated to achieving women's suffrage. Its radical approach, consisting of stone-throwing, window-breaking, arson, and physical confrontation with authorities. The History of the Women's Suffrage was written at a time when it was in the very forefront of British politics and offers an insider's perspective on the motives and ideals that inspired its leaders and followers. When the long struggle for the enfranchisement of women is over, those who read the history of the movement will wonder at the blindness that led the Government of the day to obstinately resist so simple and obvious a measure of justice. A passionate love of freedom, a strong desire to do social service and an intense sympathy for the unfortunate, together, made the movement possible.

Family and Relationships

What Mum Taught Us: Valuable Lessons and Outstanding Hospitality, Including Precious Mesopotamian Recipes
Theodora Issa, Ph.D., Afodyakno Touma B. Issa, Ph.D., Tomayess Issa, Ph.D., Tamara Issa Raphael and Afodyakno Theodore Issa
(Senior Lecturer, School of Management, Curtin University, Australia)
In series: Family Issues in the 21st Century
Softcover: 978-1-53614-586-1. $120.00.
e-book: 978-1-53614-587-8. $120.00.
This book would not have been possible without the existence of that brilliant, vivid, bright, superb, wonderful, luminous, radiant, and very beautiful person whom the authors simply refer to as ‘Mum’, or in their Aramaic (Syriac) language, ام. Their mother was always there for them as they went through the highs and lows of their lives, always encouraging and helping them throughout her life, and this help continued even when the authors became adults. She continued to be a source of great help until she answered God’s call and went into her eternal sleep on that Wednesday afternoon in March of 2016. This book is written by her five children and is an attempt to keep o Bathqyomo Marine Khoury-Issa’s memory alive. The idea of this book came to the authors as they remembered that their mother usually encouraged them to pursue their dreams, and she (together with their father) worked very hard to help them reach different milestones in their lives despite the immense difficulties that they faced. Therefore, the authors thought of sharing with others through the pages of this book some of what their mother had taught them, how she made them aware of the plight of everyone around them. Indeed, what their mother used to do throughout her life came naturally and was welcomed by all. Her children felt the way she dealt with them and all those whom she knew was something unique to her, as it came directly from her beautiful heart and delightful soul. It was the magic of her beautiful smile, the kindness of her heart and the selfless actions that she was known for, as she felt being an Orthodox priest’s wife has immense responsibilities of being with the happy, the grieving, the sick, the gravely ill, the displaced, those who belonged to her church and others from outside the church, providing for all of them in a way that was calm, comforting and seamless. Their mother hailed from Mesopotamia, “the land between the two rivers”. Mesopotamia is the place that is referred to as the “Cradle of Western Civilization”. Therefore, it is worthwhile to mention in this book some of the literature that talks about this great civilization that their parents brought them nearer to by what they taught, told and asked the authors to read in history books. The recipes included in this book were taught to the authors by their mother, and thus have a Mesopotamian origin. This book is dedicated to the authors’ mother, Bathqyomo Marine Khoury-Issa, with her unique characteristics as a spouse, mother and matriarch of the Issa family. Her care put continues to exist in the food she used to cook (both main dishes and sweets), the care she gave to the garden, the way she faced life and the way she welcomed people into her home and family.
Bullying

Bullying in Schools: Prevention, Gender Differences and Perspectives
Christopher Boone

In series: Bullying and Victimization
Hardcover: 978-1-53615-669-0. $160.00.

The opening chapter of Bullying in Schools: Prevention, Gender Differences and Perspectives presents an investigation which may help to further cross-national bullying studies by providing clear recommendations that will help researchers to take account of culturally appropriate comparisons. Chapter two explores literature on contexts within which bullying has been documented, interrogates whether bullying is influenced by any gender dynamics, and crucially reflects on the reaction of key stakeholders within the education system, towards eliminating it. Following this, a study is presented with the objectives to identify and analyse the prevalence of poly-victims, as well as determine how the levels of moral disengagement and the various defence mechanisms that victims use to explain abusive behaviour might function as predictors of poly-bullying. Theory and evidence of how parenting influences children’s involvement in bullying at school, and considers whether child gender influences this relationship are reviewed. Additionally, the relationship between bullying and suicide with special attention to specific types of bullying and gender differences are examined. The study presented in the penultimate chapter examines the theoretical justification and experimental verification various methods to ensure effective prevention and psycho-pedagogical correction of bullying in school. The final chapter outlines an exploratory study of the extent of gender based bullying occurring in an inclusive elementary school, Sekolahku-MySchool, in Yogyakarta, Indonesia. In this qualitative study, two major issues facing education in Indonesia today, discrimination and bullying towards women, are addressed.

Domestic Partner Abuse

Dating Violence: Prevalence, Risk Factors and Perspectives
Wanda Spencer

In series: Safety and Risk in Society
Softcover: 978-1-53615-542-6. $82.00.
e-book: 978-1-53615-543-3. $82.00.

The first chapter of Dating Violence: Prevalence, Risk Factors and Perspectives intends to analyse the specificities and dynamics characterizing the violence present in youth dating relationships, and is based on a vast review of studies carried out on the subject. Chapter two discusses the importance of considering education professionals’ perspectives in the dating violence analysis, assessing their level of knowledge, training and practices on dealing with dating violence incidents. Additionally, the authors address the phenomenon of violence in young people’s intimate relationships and its close connection to a particular form of crime, known as cyberstalking, which has gained exposure and social visibility in the context of dating violence. A systematic review that analyzes the prevalence of multiple victimization in young people is presented in the penultimate chapter. The main objective of this review is to access and discuss data from the empirical literature on the prevalence and characteristics of multiple victimization in this population. A qualitative study to analyse and characterize the disclosure in victims of domestic violence, more specifically to identify strategies and reasons for help-seeking, is presented in the final chapter.

Law and Society

A Closer Look at Criminal Justice
Jonathon A. Cooper (Indiana University of Pennsylvania, Department of Criminology and Criminal Justice, Indiana, US) and Kayla Jachimowski (Saint Vincent College, Latrobe, Pennsylvania, US)

In series: Criminal Justice, Law Enforcement and Corrections
Hardcover: 978-1-53615-782-6. $230.00.

A Closer Look at Criminal Justice is a collection of daring chapters on the state of the discipline. Each chapter considers a specific criminal justice or criminological problem—new or persistent—with fresh eyes. The contributors pull no punches: their insights are novel, salient, and sometimes controversial. A Closer Look at Criminal Justice is thematically divided into three parts. Part 1: Criminal Justice and Criminology
in Education, discusses how we teach our undergraduate students about race, the way we treat our graduate students, and inmate education. We wanted to highlight criminal justice education at the university level in the first part of the book in large part because this book is best suited in the classroom, but especially because as educators, we live and breathe the importance of education. The book progresses in Part 2, Theory and Praxis, with a discussion of applicable criminological theory and research methodology in criminal justice where the goal is to highlight the importance of using theory and research as the foundation for policy positions, support, and understanding. The remaining part of the book, Persistent Issues in Criminal Justice, provides fresh insights on “old” subjects and problems in the administration of justice, such as community policing, the aging prison population, and marijuana use in the United States of America. This book is best suited in senior seminars, capstone, or contemporary issues courses; master’s level classes in the criminal justice system; and is also important for faculty members and doctoral students with a vested interest in the current tempo of criminal justice practice, research, education, and thought. Reading this book, students and scholars should have a better idea of the current issues facing our discipline, particularly those issues that do not get as much exposure as others.

**Bureau of Prisons (BOP): Inmate Reentry, Female Inmates and Appropriations**

*Melody Kelley*

Hardcover: 978-1-53615-292-0. $195.00.

Intellectual disabilities have long been a concern for both practitioners and academics alike. With the introduction and advocacy of concepts to the public in recent decades, and the normalization and valorization of intellectual disabilities, humanistic concern has become the dominant trend in providing interventions and services for people with these issues. Today, various ideas for societal inclusion of those with intellectual disabilities have been introduced. However, many practitioners and academics have criticized these ideas as idealistic, and in many ways, inapplicable for actual social inclusion of people with intellectual disabilities. The situation is particularly serious regarding those intellectually disabled individuals presenting various forms of self-harm, aggression, disturbing behaviors, and emotional fluctuation (SADE: S =Self harm, A = Aggression, D = Disturbing behaviors, E = Emotional fluctuation). In many instances, social exclusion, labelling, punishments, deprivation of rights, physical restraints, as well as psychiatric medications are commonly used in controlling intellectually disabled clients with SADE. A thorough understanding of intellectually disabled clients has revealed that their self-harm, aggression, disturbing behaviors, and emotional fluctuations (SADE) are closely related to their unfulfilled needs, developmental traumas, abuse, neglect, and abandonment in their lives. These individuals have problems in expressing their views and emotions, as well as having severe attachment needs. Based on the writers’ substantial experience, clinical practice, and supervision in working with intellectually disabled clients with SADE, this book is the first to formulate and consolidate the communication, emotionality, intimacy, and trauma based interpretation and intervention for intellectually disabled clients with SADE. This book provides methods for effective, humanistic, normalized, and integrated recovery of these individuals.

**Criminal Law: Past, Present and Future Perspectives**

*Leila Cavalcanti Castro*

In series: *Criminal Justice, Law Enforcement and Corrections* 2019. 150 pp.
Softcover: 978-1-53615-232-6. $82.00.
e-book: 978-1-53615-233-3. $82.00.

In this compilation, the authors open by reviewing some concepts that must be clear when we think about ways to help the civil law system to introduce the restorative practices in the criminal law system. Additionally, the authors compare European Union criminal law to the classical meaning of criminal law. The historical development of supranational criminal law is examined, including the different roles of the judicial practice and legislative acts and improving upon the competence of the European Union in criminal law. Lastly, the authors examine the origins and development of penitentiary law in the law schools of Buenos Aires, Córdoba and La Plata between 1887 and 1955. Although in the earlier times of this period only the universities of Buenos Aires and Córdoba were active in the field, the University of La Plata has been included in order to have a complete overview of the academic world in those years.

**Government Reports on Homeland Security for March 2019**

*Dennis Maurer*

Hardcover: 978-1-53615-846-5. $195.00.

This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of March, grouped according to the topics: Homeland Security.
Human Rights in Bangladesh
Khalid Yahyea (Stoke-on-Trent, United Kingdom)
In series: Human Rights: Contemporary Issues and Perspectives
2019.
Softcover: 978-1-53616-185-4. $82.00.
e-book: 978-1-53616-186-1. $82.00.
It is established that as a ratified State of international human rights treaties the respective State should comply with its commitments and implement those rights giving effectiveness into domestic laws. Both the right to life and the right to liberty and security of persons are very important and significant in all leading international human rights instruments. The International Covenant on Civil and Political Rights (ICCPR) is a major international human rights treaty which Bangladesh already ratified some years back. Although Bangladesh has ratified this convention, it does not meet international human rights standard, more particularly, the right to life and the right to liberty. There are many reasons for this ineffectiveness but the objective of this research is to prove that a lack of political will, and in particular, an unwillingness to take effective measures to ensure due compliance is one of the main reasons behind it. The dissertation has also been undertaken to find out what the effectiveness of the right to life and the right to liberty is under Articles 6 and 9 of the ICCPR in light of both Bangladesh and international law. Accordingly, it explains and analyzes legal provisions under the Bangladeshi laws, regional human rights conventions and international legal instruments for the protection and promotion of fundamental human rights particularly the right to life and the right to liberty for all citizens especially the human rights defenders. In this regard, the research also examines different judicial decisions from national jurisdiction, regional courts and international jurisdiction as well. It further investigates what the challenges are facing those who seek to ensure respect for human rights in Bangladesh and how they overcome it.

Justice and Law Enforcement Reports for December 2018
Leah Powell
In series: Criminal Justice, Law Enforcement and Corrections
This book is a comprehensive compilation of all reports, testimony, correspondence and other publications issued by the GAO (Government Accountability Office) during the month of December, grouped according to the topic of Justice and Law Enforcement.

Organized Crime: Causes and Consequences
Robert M. Lombardo, Ph.D. (Department of Criminal Justice and Criminology, Loyola University, Chicago, IL, USA)
In series: Criminal Justice, Law Enforcement and Corrections
This book studies the causes and consequences of organized crime drawing on research from around the world including the countries of Colombia, China, Ireland, Italy, Japan, Mexico, Russia, Sweden and the United States. It also includes a discussion of transnational crime and several other key theoretical topics. One important issue examined in this text is the difference between the terms organized crime, international organized crime and transnational organized crime, an often-confusing subject. As the title indicates, one of the goals of this volume is to identify the causes of organized crime. Working independently, the contributing authors have identified similar characteristics as the causes of organized crime no matter the country, culture or time period. For those teaching organized crime at the university level, this book will be a valuable resource. It provides both an in-depth and analytical look at the world’s most powerful and persistent criminal organizations. Taking an interdisciplinary approach, this book contains both qualitative and quantitative research. The works are all original, there are no reprinted chapters in this volume. This text not only provides historical background on the world’s most powerful criminal organizations, but also challenges common assumptions about the organization of these infamous groups. This is no “guns and garlic” book but contains in-depth sociological analyses of current trends in organized crime, one that should be of interest to government officials and those responsible for setting public policy. While this book will be of interest to the serious student, non-academics and casual readers alike will also be interested in the work presented here. It provides a fascinating look at a serious social problem, one that is forever evolving and will continue to challenge the international community.
Immigration Law

Immigration: Border Security, Control Efforts and Enforcement Policy
Abel Thompson
In series: Immigration in the 21st Century: Political, Social and Economic Issues
In January and March 2017, the President issued a series of executive orders related to border security and immigration. The orders direct federal agencies to take a broad range of actions with potential resource implications. For example, Executive Order 13767 instructs DHS to construct a wall or other physical barriers along the U.S. southern border and to hire an additional 5,000 U.S. Border Patrol agents. Executive Order 13768 instructs federal agencies, including DHS and DOJ, to ensure that U.S. immigration law is enforced against all removable individuals and directs ICE to hire an additional 10,000 immigration officers. Executive Order 13780 directs agencies to develop a uniform baseline for screening and vetting standards and procedures; and established nationality-based entry restrictions with respect to visa travelers for a 90-day period, and refugees for 120 days. For the last several years, Central American migrant families have arrived at the U.S.-Mexico border in relatively large numbers, many seeking asylum. Federal immigration laws set forth procedures governing the exclusion and removal of non-U.S. nationals (aliens) who do not meet specified criteria regarding their entry or presence within the United States. Typically, aliens within the United States may not be removed without due process.

Immigration: Policy, Background and Laws
Brian D. Allen
In series: Immigration in the 21st Century: Political, Social and Economic Issues
Hardcover: 978-1-53616-068-0. $195.00.
U.S. immigration policy is governed largely by the Immigration and Nationality Act (INA), which was first codified in 1952 and has been amended significantly several times since. At a fundamental level, U.S. immigration policy can be viewed as two sides of a coin. One side emphasizes the facilitation of migration flows into the United States according to principles of admission that are based upon national interest. These broad principles currently include family reunification, labor market contribution, humanitarian assistance, and origin-country diversity. The other side of the immigration policy coin emphasizes the restriction of entry to and removal of persons from the United States who lack authorization to reside in the country, are identified as criminal aliens, or whose presence in the United States is not considered to be in the national interest. The dual role of U.S. immigration policy creates challenges for balancing major policy priorities, such as ensuring national security, facilitating trade and commerce, protecting public safety, and fostering international cooperation.

International Law

From Principles to Norms: The Development of International Law
Laura Westra, PhD (Professor Emerita, Faculty of Law, University of Windsor, Maple, Canada)
In series: Laws and Legislation
2020.
Softcover: 978-1-53616-485-5. $82.00.
e-book: 978-1-53616-486-2. $82.00.
Please include a 200-500 word descriptive paragraph which we could use for our website posting and brochures should a contract be signed: International law needs to be revised and changed radically because presently it is not able to function to protect human rights as it should. Most of the global economic transactions happen beyond states and are not under their control: in fact they are transnational, as are most of the world’s citizens’ interests and aspirations. Most states are now weak: corporations tend to control them indirectly, as well as provide citizens the services that used to be provided by states. In fact many legal scholars argue that states are now so weakened that they have become irrelevant, so that a law that is intended to be inter-national, that is between nations, ignores the global changes that have occurred supranationally, in the new transnational area controlled by non-state actors and various legal persons, some of which act in desirable ways, while many others are both dangerous and uncontrolled. The citizens of most nations are now transnational themselves, as they turn to new non-state actors and organizations that embody their interests and aspiration far better than the states where they live can: world citizens turn to the internet to follow their choices and interests as they have lost their trust in the home states, mostly unable to provide not only the services they used to provide, but also any hope of improvement or development. Hence, we argue that a law that is intended to operate exclusively between nations is no longer sufficient, as it is a system that neither includes nor regulates the real actors that contribute to global governance today, that is non-state actors and legal persons of various kinds. The foundational principles that inspired the most important international legal
regimes for the protection of humanity, especially those forbidding racial discrimination, protecting the rights of women and children, of prisoners and others who are oppressed, which are no longer respected too many states, as political gain of various government parties supersedes the respect for principles of protection. Many new problems that emerge then are simply ignored, from the grave problem of migration everywhere, to the loss of democratic power often controlled by the economic interests of the most powerful especially in the West, to the imminent disasters caused by climate change, all problems that are beyond the scope of any single nation to control. Therefore this work proposes a return to the basic principles that should govern international legal regimes in order to achieve a renewed, effective international system of laws.

Military and Veteran Issues

A Closer Look at Veterans’ Benefits
Amanda M. Møller
In series: Military and Veteran Issues
2020.
This book reviews VA benefits and services. The information included pertains to all members of the armed forces, including members of the National Guard and Reserve Components. Chapter 1 contains information on eligibility, how to apply for benefits, key links and resources, and all the details about VA benefits. Chapter 2 describes employment assistance programs offered by several federal agencies to assist veterans in their transition from the military to the civilian labor force and examines, in greater detail, the SBA’s veteran business development programs, the SBA’s efforts to assist veterans’ access to capital and the SBA’s veteran contracting programs. Chapter 3 discusses three types of housing assistance—the loan guaranty program, direct loan programs, and Specially Adapted Housing program—their origins, how they operate, and how they are funded. Chapter 4 reports on the revisions to the loan guaranty program. As reported in chapter 5, Vocational Rehabilitation and Employment for veterans (VR&E) is an entitlement program that provides job training and other employment-related services to veterans with service-connected disabilities. Chapter 7 surveys the legal issues surrounding the treatment of veterans’ benefits in bankruptcy.

Military Issues: Modernization, Readiness and Terrorism Trials
Ethan Hamlyn-Harris
In series: Military and Veteran Issues
Hardcover: 978-1-53616-024-6. $195.00.
Chapter 1 assesses (1) the status of the Army’s near- and long-term modernization efforts; and (2) the extent to which the Army has applied. Chapter 2 addresses the Army’s progress in: (1) establishing Army Futures Command, and (2) developing its near-term and long-term modernization strategies. Chapter 3 reports on Army readiness, skills shortages, equipment maintenance and modernization, acquisition, training, force structure. Chapter 4 assesses the extent to which the Air Force (1) had aircraft maintainer staffing gaps, (2) experienced attrition of maintainers and took steps to help retain maintainers, and (3) met its annual technical school completion rate goals for maintainers. Chapter 5 describes (1) how DOD currently facilitates public access to proceedings; (2) challenges the public faces in gaining access to or obtaining information on proceedings; and (3) what is known about potential options to address public access challenges, including any related tradeoffs.

The Veterans Choice Program (VCP): Access, Implementation and Improvements
Mabel Page
In series: Veterans: Benefits, Issues, Policies and Programs
Hardcover: 978-1-53614-819-0. $160.00.
In response to concerns about access to medical care at many Department of Veterans Affairs (VA) hospitals and clinics across the country in spring 2014,1 Congress passed the Veterans Access, Choice, and Accountability Act of 2014 (VACAA, P.L. 113-146, as amended). On August 7, 2014, President Obama signed the bill into law. Among other things, the act establishes a new program that would allow the VA to authorize care for enrolled veterans through the Veterans Choice Program if they meet the eligibility requirements.
The Veterans Choice Program and Employee Misconduct within the Veterans’ Health System

Elise Braber

In series: Military and Veteran Issues

The “Veterans Choice Program” requires the VA to furnish hospital care and medical services through eligible non-VA health care providers to eligible veterans who either cannot be seen within the wait-time goals of the Veterans Health Administration or who qualify based on their place of residence or face an unusual or excessive burden in traveling to a VA medical facility as reported in chapters 1 and 2. Chapter 3 examines how officials at VHA facilities responded to adverse-action information received through National Practitioner Data Bank, how VHA facilities adhered to polices regarding providers with adverse actions, and steps VHA has recently taken to ensure that providers meet licensure requirements. Chapter 4 reviews the extent to which VA collects reliable information associated with employee misconduct and disciplinary actions, adheres to documentation-retention procedures when adjudicating cases of employee misconduct, ensures allegations of misconduct involving senior officials are reviewed according to VA investigative standards and these officials are held accountable, and has procedures to investigate whistle-blower allegations of misconduct; and the extent to which data and whistle-blower testimony indicate whether retaliation for disclosing misconduct occurs at VA.

Veterans Affairs Information Technology: Progress, Modernization and Challenges

Bryan Barton

In series: Veterans: Benefits, Issues, Policies and Programs
2020.
Hardcover: 978-1-53616-452-7. $160.00.

The Department of Veterans Affairs (VA) has made limited progress toward addressing information technology (IT) system modernization challenges. Chapter 1 begins by examining IT because it is so important to everything VA does. From delivering timely care to veterans, to ensuring that medical records follow the patient, to making benefit decisions accurately, modern IT systems are essential. Chapter 2 summarizes key results and recommendations for the VA IT systems modernization efforts, FITARA implementation, and cybersecurity efforts. VA provides health care services to almost 9 million veterans and their families and relies on its health information system—VistA—to do so. Chapter 3 summarizes preliminary observations regarding costs incurred for the system and related activities during the last 3 fiscal years; key components that comprise VistA and are to be replaced; and actions VA has taken to prepare for its transition to the Cerner system. The National Defense Authorization Act for Fiscal Year 2008 included provisions that VA and DOD jointly develop and implement electronic health record systems or capabilities and accelerate the exchange of health care information. The act also required that these systems be compliant with applicable interoperability standards as reported in chapter 4. Chapter 5 determines VA’s efforts to modernize VistA, including key contractors, contract costs, and expected contractor activities and VA’s current plans for modernizing VistA and the progress that has been achieved to date. Chapter 6 summarizes VA’s history of efforts to modernize VistA, including past use of contractors, and the department’s recent effort to acquire a commercial electronic health record system to replace VistA. In September 2014, GAO reported on the Department of Veterans Affairs’ (VA) Program of Comprehensive Assistance for Family Caregivers (Family Caregiver Program) and found that the program office had limitations with its information technology (IT) system—the Caregiver Application Tracker (CAT). Chapter 7 examines how VHA is implementing the Family Caregiver Program.

Veterans’ Disability Benefits: Claims, Appeals and Exams

James MacGillivray

In series: Military and Veteran Issues
Hardcover: 978-1-53615-932-5. $160.00.

In 2016, the Veterans Benefits Administration (VBA) centralized distribution of the disability compensation claims workload through the National Work Queue, which prioritizes and distributes claims to regional offices based on their capacity; however, there are gaps in VBA’s guidance for processing claims with errors. Chapter 1 examines (1) how VBA manages workload and performance for the disability compensation claims process, (2) how well VBA’s timeliness and accuracy measures capture its regional offices’ performance in processing these claims, and (3) how well selected regional offices communicate with VSOs and congressional caseworkers about these claims. The Department of Veterans Affairs’ (VA) plan for implementing a new disability appeals process while attending to appeals in the current process addresses most, but not all, elements required by the Veterans Appeals Improvement and Modernization Act of 2017 (Act). Chapter 2 examines the extent to which VA’s plan (1) addresses the required elements in the Act, and (2) reflects sound planning practices identified in prior GAO work. Chapters 3, 4 and 5 focus on the extent to which VA’s plan: addresses the required elements in the Act, and reflects sound planning practices previously identified. Chapter 6 examines (1) what is known about the quality and timeliness of VBA contracted exams; (2) the extent to which VBA monitors contractors’ performance; and (3) how VBA ensures that its contractors provide qualified and well-trained examiners. Chapter 7
addresses: (1) what is known about the quality and timeliness of VBA contracted exams; (2) the extent to which VBA monitors contractors’ performance to ensure that they provide high quality and timely exams; and (3) how VBA ensures that its contractors provide qualified and well-trained examiners.

Political Science

A Blood Border: Trieste between Mussolini and Tito
Luisa Morettin (Dean of the Faculty of Politics and International Relations, NCI University London, United Kingdom)
In series: Political Science and History

Venezia Giulia is a small border region that stretches over Italy, Slovenia and Croatia. For centuries it’s capital city, Trieste, was a multicultural place whose inhabitants shared a pragmatic mercantilism. However, dormant tensions, especially between Italians and Slavs, emerged powerfully towards the end of the Hapsburg rule when the idea of nationalism gained ground and was later fully exploited by Italian fascism. After Italy’s Armistice in September 1943, and again in May 1945, Venezia Giulia became a no man’s land where the competing forces of fascism and communism fought a pitched struggle. It was the last battle of the Second World War and the first of the Cold War: the much sought-after stakes were Trieste and Venezia Giulia where the violence unleashed was beyond brutal. Some of the most terrifying episodes of this story are linked to the Karst landscape of the region, which is studded with foibe, deep cone-shaped pits excavated by water in the limestone rock. During the period of Yugoslav partisan rule in the area, thousands of Italians were thrown inside these pits. Some were killed beforehand, others were dumped alive and left to rot in the chasms. However, such events were sharply contested by Marshal Josep Broz Tito and still are by left-wing sympathisers, sparking intense debate over the truth. Was this simply revenge for Italy’s attempts to erase the Slav identity of the Slovene minority in Venezia Giulia? Was it just self-defence for the 1941 fascist invasion of Yugoslavia? Were all Italians fascists and all Slavs communists? By drawing on Anglo-American documents, this powerful study challenges decades of selective rhetoric about the rendition of events, leading the reader through the process by which the foibe killings became possible. Rather than focusing on the minutiae of the ongoing debate, the book reduces the story to a modern territorial contest: two nations, one land. A Blood Border is a nuanced and detailed account of Mussolini’s and Tito’s manoeuvres to redraw borders in blood, in order to achieve maximum territorial expansion where to impose their ideology. The history of this brutal time also analyses the reaction of the Allied troops present in the area. The result is a vivid and often disturbing account of facts, where Luisa Morettin convincingly portrays a border region in a moment of historical transformation.

Cuba: Policy, Restrictions and Embassy Injuries
Nicholas Chabot
In series: Latin American Political, Economic, and Security Issues
Hardcover: 978-1-53616-115-1. $195.00.

Since the early 1960s, when the United States imposed a trade embargo on Cuba, the centerpiece of U.S. policy toward Cuba has consisted of economic sanctions aimed at isolating the government. Chapter 1 reviews the U.S. policy toward Cuba under the Obama and Trump Administrations. Chapter 2 examines U.S. policy toward Cuba in the 116th Congress. Chapter 3 provides information on legislative provisions restricting relations with Cuba. It Restrictions on travel and remittances to Cuba have constituted a key and often contentious component in U.S. efforts to isolate Cuba’s communist government since the early 1960s. Chapter 4 examines developments in U.S. policy restricting travel and remittances to Cuba, current permissible travel and U.S. diplomats and their families in Havana, Cuba, were affected by incidents that were associated with injuries, including hearing loss and brain damage. State has reported that over 20 U.S. diplomats and family members in Havana have suffered from medical conditions believed to be connected to the incidents, which began in late 2016 and have continued. By law, State is generally required to convene an ARB within 60 days of incidents that result in serious injury at, or related to, a U.S. mission abroad, but the Secretary of State can determine that a 60 day extension is necessary. Chapter 5 examines the extent to which State’s ARB policy ensures that M/PRI is made aware of incidents that may meet the ARB statute criteria. Chapter 6 is the statement of Brian M. Mazanec concerning the injuries to U.S. personnel in Cuba. Chapter 7 reports on the U.S. response to injuries of U.S. Embassy personnel in Havana, Cuba On August 31, 2016, as part of a shift in U.S. policy toward Cuba, air carriers resumed scheduled commercial flights between the United States and Cuba, a route previously only open to public and private charter carrier operations. Chapter 8 examines (1) the extent to which TSA followed its standard operating procedures when assessing aviation security at Cuban airports in fiscal years 2012 through 2017; (2) the results of TSA’s Cuban airport assessments in fiscal years 2012 through 2017; and (3) the results of TSA’s air carrier inspections for Cuba in fiscal years 2016—when commercial scheduled air service between the United States and Cuba resumed—and 2017.

Christopher Anglin (University of the District of Columbia, Washington DC, USA)

In series: Congressional Policies, Practices and Procedures

In series: Religion and Society

2019.


This reference guide provides the reader straightforward coverage on the controversial and often complicated topic of how the U.S. Supreme Court interprets the Religion Clauses of the U.S. Constitution, which promote the free exercise of religion and prohibit the establishment of religion. The resulting court decisions affects the lives of all Americans in an amazingly wide variety of contexts in the religious and government context. This diverse range includes abortion, conscience rights, drug use, military service, and the rights of same couples. These issues are highly controversial and often passionately divisive. This work specifically addresses how the Supreme Court has decided these issues during the tenure of the current Chief Justice, John Roberts. In applying the Religion Clauses to a specific case, the justices often follow the philosophical principles of what the Clauses mean. This book explains these differing ideologies and their significance in Supreme Court jurisprudence on cases where the Religion Clauses have been invoked. While holding to long-established principles, American law constantly evolves to meet the challenges of the United States and as a result of reinterpretation of existing legal issues. Chief Justice John Roberts has served on the Court since 2005. The Court has significantly changed during this time, especially in recent years. As jurists change, the overall judicial perspective of the Court changes as well, giving rise to a potentially new Constitutional jurisprudence in all areas of the law. In covering constitutional jurisprudence in contemporary America, we discuss complicated topics in plain English, with minimal jargon, to make the work as accessible as possible to students and general readers. Editorial enhancements are provided to help the researcher refine or expand their research. As a reference work, this book is not offered to persuade the reader to adopt a particular opinion, but instead, seeks to be unbiased, presenting differing positions on given issues, and facilitating the reader to make informed on some of the most important issues in contemporary American society.

Global Intelligence Priorities (from the Perspective of the United States)

John Michael Weaver, DPA (Assistant Professor of Intelligence Analysis, York College, PA, USA) and Jennifer Yongmei Pomeroy, PhD (Assistant Professor of Geography, York College, PA, USA)

In series: Political Science and History


The United States is seemingly confronted with more global issues now than it has ever experienced. The U.S., under a relatively new presidential administration, is looking to depart from globalization though there are still inextricable linkages among all countries in the world; in 2018 both the Defense Department and State Department provided updates to their strategies and security plans. This book provides an open source intelligence analysis of regions, countries and non-state actors from around the world that could have an impact on the United States. These areas and actors are dissected using predominately qualitative analysis techniques focusing on secondary data sources in order to provide an open source intelligence look at threats as seen by the United States using two models (the York Intelligence Red Team Model and the Federal Secondary Data Case Study Triangulation Model). The key audience for this book include the 17 members of the U.S. intelligence community, members of the U.S. National Security Council, governments of other countries that share the United States’ assessment of current threats, nongovernmental organizations (NGOs) looking to provide support abroad, and private sector companies considering expanding their operations overseas.

Productive Forces of Design: The Basis of Post-Industrial Development

Vladimir Strokov (Doctor of Technical Sciences, Center Productive Forces of Intellectual Work, Supervisor of Studies, Moscow, Russia)

In series: Economic Issues, Problems and Perspectives


Softcover: 978-1-53615-581-5. $95.00.

e-book: 978-1-53615-582-2. $95.00.

The goals of post-industrial development have been formulated: design and production of complex high-tech varieties of types of products satisfying the strategic needs of the country (being the country’s wealth). There are functional and parametric varieties.
Functional varieties differ in the number of consumer functions (properties), for example, the first stage of the Falcon 9 rocket launches the vehicle, returns to the launch site and lands on the platform. Parametric varieties have different parameters of the same consumer functions, for example, the varieties of aircraft “Airbus” A380 and A381 differ in the number of seats (180 and 236) and flight range (6100 km and 5900 km). Varieties may have a program management by satisfaction of needs, replacing a person, for example, the first stage of the Falcon 9 rocket has this program management. For the first time in the world practice, the decisive role of the productive forces of computer-aided design in fulfilling the goals of post-industrial development has been shown. The productive forces of computer design: the aggregate of designers (constructors, analysts, technologists) and computer means of design are capable of a) designing digital models of intermediate (parts, units, assemblies) and final products, b) analyzing and modeling structures, c) carrying out technological preparation of production, d) designing composite materials with the required parameters of consumer functions. Computerization of design leads to an instantaneous exchange of information and replacement of tons of design documentation with a single flash disk and creates the possibility of designing varieties of products with program management (without human participation) of satisfaction of the needs (age-old dream of humanity). The use of composites provides the possibility of designing varieties of items being intellectual property carriers, which meet the required parameters. The principles of the organization of the computer-aided design process (universalization, parallelism, optimization, innovations, and continuity) have been introduced and substantiated. The productive forces of computer-aided design changed the productive forces of the production of the K. Marx’s model: universal machines replaced specialized machines; software control of the machine, developed by a technologist, caused the replacement of the worker. The organization of the production process of intermediate and simple products in time has been developed. Universalization, innovations, optimization of design and production lead to the international division of mental labor and production capital of individual countries and regions into the design of stages and varieties and the production of varieties of intermediate products, carriers of intellectual labor property with the required consumer functions and their parameters. Universalization, innovations, optimization of design and production lead to the international per-stage and per-object division of the designer’s mental labor and per-object division of the productive capital of individual countries and regions. The result is the design and production of varieties of intermediate products, carriers of intellectual labor property, having the required consumer functions and parameters. International cooperation of design organizations and enterprises of individual countries and regions based on the principles of parallelism and continuity leads to the formation of families of international design and production. The families are able to produce parametric and functional-parametric varieties of types of final products, carriers of intellectual labor property, satisfying functional and parametric requirements. The production costs have been determined. A mechanism has been developed for the development of the productive forces of design and production through the renewal of intellectual property in the design process and the accumulation of capital in the production process.

**Strategy and Human Rights**

*Laure Paquette (Lakehead University, Canada)*

In series: *Human Rights: Contemporary Issues and Perspectives*


This book applies the ancient wisdom of the oppressed to the achievement of greater respect for human rights. It is the basis for a set of tools that the powerless can use to make the best of bad situations. One important part of these tools is the worksheet system, which is a knowledge transfer system. Another is a set of case studies illustrating how it can and has been used. It provides a suitable foundation for the analysis and design of overall sets of actions to achieve those goal, introducing the theoretical foundations of strategy and strategic intervention. It includes case studies for national and international actors. These include: an individual’s fight for his own human rights, Edward Snowden; a subnational group’s strategy in dealing with a state, the Committee of Concerned Scientists and the People’s Republic of China; a supranational group’s strategy in the supra-national system, Amnesty International and the defense of freedom of expression; a state and a group of states, Poland and the UN system of human rights; a group of states and a supranational group, Human Rights Watch and the UN; a multiplayer, multilevel strategy in the supra-national system, Amnesty International and women’s rights; and a group of states, the EU and the UN on human rights 1995-2015.
Missile Technology and Missile Defense

Air Force Fighter Plane Programs: F-35, F-15EX and F-22
John H. Harris
In series: Defense, Security and Strategies
The F-35 Joint Strike Fighter (JSF), also called the Lightning II, is a strike fighter airplane being procured in different versions for the Air Force, Marine Corps, and Navy. The F-35 program is DOD’s largest weapon procurement program in terms of total estimated acquisition cost. Current DOD plans call for acquiring a total of 2,456 F-35s. Allies are expected to purchase hundreds of additional F-35s, and eight nations are cost-sharing partners in the program with the United States. Chapters 1 through 6 address issues and concerns with this program. The Trump Administration’s FY2020 budget proposal includes a request for $1.1 billion to buy 8 F-15EX aircraft, the first procurement toward a planned initial buy of 144. As reported in chapter 7, this proposal represents a change from previous Air Force plans to procure only stealthy “fifth-generation” fighter aircraft. Chapter 8 examines the extent to which the Air Force’s organization of its F-22 fleet maximizes availability of aircraft and utilization of its F-22 fleet affects pilot air superiority training.

Nuclear Weapons

Weapons Systems: Sustainment, Costs and Nuclear Capability
Joseph E. Sosa
In series: Nuclear Materials and Disaster Research
DOD spends billions of dollars annually to sustain its weapon systems to support current and future operations. The Air Force and Navy are operating many of their fixed-wing aircraft well beyond their original designed service lives and therefore are confronted with sustainment challenges. Chapter 1 examines the trends in availability and O&S costs for selected Air Force and Navy fixed-wing aircraft since fiscal year 2011, including whether they met availability goals, and assesses the extent that the departments documented sustainment strategies, reviewed sustainment metrics, and implemented plans to improve aircraft availability. Software is integral to the operation and functionality of DOD equipment, platforms, and weapon systems, including tactical and combat vehicles, aircraft, ships, submarines, and strategic missiles. Chapter 2 examines the extent to which (1) DOD has policies and organizations in place to manage the sustainment of operational system software for weapon systems; and (2) DOD and the military departments track costs to sustain weapon system software. The Department of Defense (DOD) and the Department of Energy (DOE) are undertaking an extensive, multifaceted effort to sustain and modernize U.S. nuclear weapons capabilities, including the nuclear weapons stockpile; the research and production infrastructure; delivery systems; and the nuclear command, control, and communications (NC3) system. Chapter 3 presents observations on the extent to which the FY 2018 joint report provides accurate and complete information about nuclear sustainment and modernization budget estimates and related budget estimating methodologies. The Department of Defense and NNSA have sought for nearly a decade to replace the capabilities of the aging W78 nuclear warhead used by the U.S. Air Force. Chapter 4 describes NNSA’s steps in key early planning areas—including program management, technology assessment, and coordination with facilities and capabilities—to prepare to restart a program to replace the W78. Responsibility for U.S. nuclear weapons resides in both the Department of Defense (DOD) and the Department of Energy (DOE). DOD develops, deploys, and operates the missiles and aircraft that deliver nuclear warheads. It also generates the military requirements for the warheads carried on those platforms. Chapter 5 focuses on the facilities managed by the DOE and its semiautonomous National Nuclear Security Administration (NNSA). The Trump Administration’s Nuclear Posture Review includes plans for the United States to deploy two new types of nuclear weapons “to enhance the flexibility and responsiveness of U.S. nuclear forces.” Chapter 6 highlights that these weapons represent a response to Russia’s deployment of a much larger stockpile of lower-yield nonstrategic nuclear weapons.
Achievement Motivation: Perspectives, Influences and Outcomes
Amie Naomhán
In series: Psychology of Emotions, Motivations and Actions
Softcover: 978-1-53615-450-4, $82.00.
e-book: 978-1-53615-451-1, $82.00.
Achievement Motivation: Perspectives, Influences and Outcomes aims to examine the definition and measurement of achievement motivation in sport. A systematic search of the literature was undertaken to identify relevant self-report scales, and each scale is critiqued by describing its general properties, factor structure, evidence of reliability and validity, and potential applications. Next, the authors examine competition, which is a state and trait variable related to achievement motivation, and the relationship it has to behavioural, physiological, and affective outcomes during virtual reality-based sport and exercise. The concluding study sets out to determine the relationship between the level of anxiety and student learning motivation, the relationship between student anxiety levels and student learning achievement, the relationship between learning motivation and student learning achievement, and the relationship between the level of anxiety and student learning motivation simultaneously on student learning achievement.

Attention Today
Tindara Capri (Department of Clinical and Experimental Medicine, University of Messina, Via Bivona, Messina, Italy), Rosa Angela Fabio (Department of Clinical and Experimental Medicine, University of Messina, Via Bivona, Messina, Italy), Giulia Emma Towey (Department of Cognitive Sciences, Psychological, Educational and Cultural Studies, University of Messina, Italy) and Alessandro Antonietti (Department of Psychology, Catholic University of the Sacred Heart, Milano, Italy)
In series: Psychology Research Progress
Softcover: 978-1-53615-441-2, $95.00.
e-book: 978-1-53615-442-9, $95.00.
This book aims to present an overview of current research and dominant theories on human attention. It presents a comprehensive review of the current state of theories in the field, including the measurement and neuropsychology of attention. It also discusses the relationship between attention and new media. The title of this book includes the word “today,” because the authors sought to address recent trends and potential future directions in the field of human attention. This book is organized into four chapters. The first chapter explores the theoretical models of attention from historical theories to current research. The second chapter analyses the measurements of attention, with particular reference to paradigms that have been used to study visual and auditory attention. The third chapter focuses on two aspects: the neural basis of attention and electrophysiology, distinguishing the different functions of attention. The last chapter considers the interactions between attention and new media, in particular, television, smartphones, computers, and video games. Both the novice and expert will be able to understand and learn much from reading this book. It is aimed at both students and researchers, as well as professionals in healthcare, education, social care, and related fields.

Empathy: Past, Present and Future Perspectives
Albert K. Bach
In series: Psychology of Emotions, Motivations and Actions
2019.
 Hardcover: 978-1-53616-372-8, $230.00.
In this compilation, the authors analyze the feeling of empathy in the context of the constitution of empathetic bonds that mark human relations. Empathy is shown as a spontaneous manifestation, natural and implicit, and present in all human encounters. Following this, the connection between the capacity for empathy and basic personality traits and affective attachment dimensions is investigated, seeking to determine which personality type is most empathetic. The concept of intracultural empathy as a culturally-relevant manifestation of empathy that is directed toward members of a shared cultural/ethnic/racial group is introduced, and its utility for understanding the particular cultural context of critical consciousness development among African American youth is explored. One study utilizes a large sample of college students to examine the relationship between cyberbullying participation roles (cyberbullies, cybervictims, cyberbully-victims, and non-participant controls), empathy (cognitive and affective), and psychopathy (primary and secondary). The work also examines these relationships by gender to identify whether male and female differences exist among
cyberbullies, cybervictims and cyberbully-victims across these traits. Next, a study is presented which seeks to confirm or refute the assumption that a program of empathy development in pre-graduate teachers training has a positive effect on changes in cognitive and emotional element of empathy in an experimental group of future teachers. The authors go on to explore the concept of empathy in physical education and sport from a diachronic perspective. Additionally, activities for providing empathy skills through physical education and sports are described. The experience of awe in relation to the empathic ‘feeling into’ and the ‘being moved’ phenomenological quality of aesthetic experience is investigated, as instantiated in the specific case of religious icons-paintings. This approach focuses specifically on an extensive exploration of the perceivers’ experience of religious icons in relation to any emergent aesthetic, cultural, spiritual and religious issues. Lastly, different perspectives on animal rights activities are discussed in conjunction with the role that sympathy and empathy play. The authors then move on to look at the dualism and anti-dualism aspects of support in detail, as well as the theoretical contributions made to understanding why views of collective action relying on economic rationality are inadequate in explaining human behavior.

Firearms and Suicide: Is Prevention Possible?
David Lester, Ph.D. (Stockton University, Galloway, NJ, USA)
In series: Psychology of Emotions, Motivations and Actions
Softcover: 978-1-53614-690-5. $95.00.
e-book: 978-1-53614-691-2. $95.00.
There are many issues in the role of firearms and personal violence (suicide and homicide). Do strict gun control laws have a preventive impact on the use of firearms for personal violence? Does the prevalence of firearm ownership impact the use of firearms for personal violence? Do people perceive the different methods for suicide differently? Are there certain types of people and situations that favor the use of guns for personal violence? Are there possibilities for reducing the role of firearms in personal violence other than reducing their prevalence? What is the experience of other nations (Australia and Canada) in coping with the role of firearms in personal violence? This book will explore the answers to these questions.

Occupational Stress: Risk Factors, Prevention and Management Strategies
Nicola Mucci, MD, PhD (Associate Professor of Occupational Medicine, University of Florence, Italy), Gabriele Giorgi, PhD (Associate Professor of Organizational Psychology, European University of Rome, Italy), Francesco Sderci, MD (Research Grantholder of Occupational Medicine, University of Florence, Italy), and Giulio Arcangeli, MD (Associate Professor of Occupational Medicine, University of Florence, Italy)
In series: Safety and Risk in Society
Stress related work, although always present, is considered one of the new risks for occupational medicine. This is largely due to a general change in the organization of work, inevitable in a constantly evolving market. It is also due to the presence of objective and subjective indicators that allow a satisfactory, though very complex, risk assessment. Related work stress generates repercussions on the company at every level, with a reduction in productivity, a reduction in the corporate image, a reduction in the quality of service, an increase in absenteeism and the dissatisfaction of workers. Some of these aspects are often submerged and difficult to identify. Related work stress also generate significant costs, both direct and indirect, for companies. A budgeted economic investment will be useful for forward-looking companies, especially for large companies. This book, written by authors from all over the world, will analyze some aspects of this increasingly relevant subject.
Positive Psychology for Healthy Organizations: The Challenge of Primary Prevention in a Cross-Cultural Perspective

Annamaria Di Fabio (Department of Education, Languages, Intercultures, Literatures and Psychology (Psychology Section), University of Florence, Florence, Italy)

In series: Psychology Research Progress


The book “Positive Psychology for Healthy Organizations: The Challenge of Primary Prevention in a Cross-Cultural Perspective” underlines the importance of a preventive perspective for healthy and sustainable organizations. The book presents a cross-cultural approach regarding problems and possible resources for strengthening healthy organizations. Primary prevention can be considered as a universal value and for this reason primary preventive interventions have to be taken into account for improving strengths, also if articulated globally on the basis of different contexts and cultures. This volume gives a contribution to the challenge to overcome a dark side towards a positive side in organizations, focusing on healthy people as flourishing and resilient workers. The book includes contributions from different Western and Eastern countries, highlighting the relevance in a cross-cultural perspective of a positive work environment in promoting employee health, well-being, and performance. The book includes two parts. The first part presents contributions that look to go beyond the dark side in organizations in a cross-cultural perspective, individuating new awareness, resources and perspectives. The second part aims to expand the horizons, particularly focusing on a primary prevention perspective with the aim of giving a contribution in concretely building healthy organizations. Thanks to the chapters of the different authors, this book is a relevant and substantive contribution in the framework of a cross-cultural approach to promote a positive preventive psychology for healthy organizations. The volume also stressed the value and the challenge of a primary prevention in a cross-cultural perspective for building healthy work environments. As a whole, this book advances a positive cross-cultural primary preventive perspective to promote healthier and more sustainable workers and organizations in the third millennium, identifying it as a valuable point of reference for practice and research.

Psychology of Religion, Violence, and Conflict Resolution

Ilongo Fritz Ngale (National University of Lesotho, Roma, Maseru, Lesotho & Institute for Dispute Resolution in Africa, University of South Africa, UNISA)

In series: Psychology of Emotions, Motivations and Actions
In series: Religion and Society

Hardcover: 978-1-53615-536-5. $230.00.

Psychology of religion, violence, and conflict resolution highlights the causes of intrareligious and interreligious violence, and proposes dual models for understanding the latter, for facilitating moral regeneration, universal peaceful coexistence, and holistic individual and collective flourishing. Religious violence, especially and paradoxically perpetrated by persons identifying with specific religious movements, has made religion an enigma, with a progressively controversial status. In other words, intrareligious and interreligious violence is associated with some of the bloodiest episodes of humankind’s tragic history, and it is on this basis that understanding the fundamental causes of religious strife becomes a vital preoccupation of researchers, decision makers and the general public, beyond and above religious obeisance, or total absence of any. Furthermore, and more preoccupying, there is no space, time, or people of the world today, that are free of the modern day scourge of religious violence. Humankind all over the earth finds itself having to confront this modern day gorgon, which is faceless, non-discriminatory, and brutally ruthless, a far cry from the myth and deontology of religion as the “link between humankind and a higher source of being and goodwill.” Psychology of religion, violence, and conflict resolution unveils the psychological mind-set lurking in the bloody shadows of intrareligious and interreligious violence, activated through the prisms of exclusivism, sectarianism, fundamentalism, intolerance, extremism, hate speech, virulent condemnation of heresy, all culminating in self-righteous “murders in God’s Name.” The work is not fatalistic and pessimistic though because it highlights the possibility of individual and collective moral regeneration via the Greater and Lesser Jihad, or self-sacrifice and selfless service, grounded in the realization of the inalienable unity of being, for the preservation and unlimited flourishing of all creation. The climax of the work is the projection of a non-mythical but highly probable and limitless sustainable “golden age,” to be actualized when the preconditions of goodwill, peaceful coexistence, mental illumination, and selfless service become cornerstones of a holistic, universalistic, communalistic, and humanistic ethic of being, knowing, and doing. The book represents a unique and most timely contribution to research and literature on religion, violence, and conflict resolution, and is intended to become a vital resource and reference material for students,
Compassion has a growing scientific basis, notably within psychology and neuroscience but its application is increasingly evident across a range of health and social care systems. This book brings together the wisdom of compassionate science through the exposition of work by international experts on the development of evidence in the field of compassion research and training. Divided into four sections, readers will find a comprehensive and contemporary review of current measures, opportunities for training into compassion and self-compassion and its application to different contexts (such as mental illness and end-of-life), as well as an understanding of compassion at a more global level. As a whole, it provides a comprehensive text for academics, researchers and scholars as well as students interested in this new and dynamic field of study. This new textbook, edited by Laura Galiana and Noemí Sansó, offers different facets of a complex concept and will no doubt lead to further debate and a better discourse on how compassion can be transformative. And that, is something truly powerful.

The Power to Care: Effects of Power in Intimate Relationships

Erez Zverling, Ph.D. (Department of psychology, The College for Academic Studies, Or Yehuda, School of Social Work, University of Haifa, Israel)

In series: The World of Psychology: Therapeutic, Relational, Teaching
Edited by: Ami Rokach (Department of Psychology, The Center for Academic Studies, Or Yehuda, Israel, and York University, Toronto, Canada)

Softcover: 978-1-53615-282-1. $95.00.

What happens when men and women feel powerful in intimate relationships? When does power corrupt and when does it lead to positive consequences, such as increased sensitivity to others’ needs, personal growth, and social responsibility? This book offers anyone interested in such questions a clear and accessible depiction of the effects of social power, based on cutting-edge theory and research. The book starts with a general discussion on the ways power influences individuals. The role of one’s personality, goals, and culture seem to play a decisive role in whether power leads to benevolent or malevolent consequences. Some effects of power are more intuitively understood (e.g., taking from or contributing to a common resource, or aggressive responses in parents who feel powerless), while other effects regard much more surprising phenomena (e.g., self-fulfilling prophecies, stopping an annoying fan, or forgiveness for a transgression). Following the description of this social-psychological mechanism, The Power to Care discusses the cultural and developmental circumstances in which power is experienced. Culturally acquired gender-roles, experiencing racism, egotistic vs. altruistic motivations, and defensive tendencies – all influence what men and women want in intimate relationships, and the way power can motivate them to attain their goals. These circumstances may explain the gender differences found in the results of three experiments, described in Chapter 4. In these experiments, men and women in long-term, intimate relationships reacted differently to a temporary sense of power, in terms of their tendency to self-focus, take the perspective of others, and objectify their relationship partners. In the last section, The Power to Care discusses the seemingly contradictory beliefs of professionals and laymen alike, that power corrupts, but that the empowerment processes yields positive results. In this section, the role of power and empowerment processes is discussed, mainly in macro-level interventions, in intimate partner violence (for both victims and perpetrators), overcoming addiction, and in policy practice (e.g., in court verdicts regarding cases of post-divorce relocation of custodial parents).
Understanding the Risk Factors for Suicidal Behavior

Horace N. Ballou

In series: Psychology of Emotions, Motivations and Actions
2020.
Softcover: 978-1-53616-468-8. $82.00.
e-book: 978-1-53616-469-5. $82.00.

In this compilation, the authors provide a literature review of the relationship between hormones including testosterone, prolactin, leptin, hypothalamus-pituitary-adrenal axis hormones, hypothalamus-pituitary-thyroid axis hormones, oxytocin, ghrelin, estradiol and progesterone, insulin, melatonin and suicidal behavior, which has potential public health and clinical significance. Next, protective factors for suicide are highlighted. The discussion also shows how these protective factors also interact with risk factors to provide a buffering effect, thus preventing suicide. A further discussion on prevention in at-risk groups is also conducted. To assess which protective variables are more predictive of a greater or lesser lethality of a previous suicide attempt, the authors study the concept of implementing a higher level of resilience to possible retries at 6 and 12 months after the first attempt. The sample was comprised of 166 people who had been admitted to the emergency services due to a suicide attempt. The purpose of the concluding study is to test whether a distal environmental factor, childhood maltreatment (including physical, sexual and emotional abuse), and more proximate cognitive and affective factors are shared correlates of suicide attempts and dating violence perpetration.

A Multi-Dimensional CARES Model in Clinical Practice with People with Borderline Personality Disorder: A Comprehensive and Empathetic Articulation

Kam-shing Yip (Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong, China)

In series: Mental Illnesses and Treatments

People with borderline personality disorder are always known as the most difficult client group to human service professionals. It is partly because of their highly fluctuating moods and relationships with others as well as their impulsivity and highly risky behaviors such as attempted suicide, self-harm behaviors and substance abuse. Coupled with these are a variety of co-morbid mental illnesses including depressive disorder, hysteria, anxiety disorder and brief psychosis. This book begins with a comprehensive articulation of diagnosis and etiology of borderline personality disorder. Four borderline conditions are clinically identified; they are pre-borderline condition, full energy condition, low energy condition and post-borderline condition. Among these four conditions, many different types of manifestations are explored. A multi-dimensional articulation of different perspectives of borderline features are mentioned including trauma, attachment, self-splitting and emotionality. Based on the writers’ 30 years of clinical work and supervision of clients with borderline personality disorder, this book is the first step in integrating various clinical perspectives and constructs a comprehensive, empathic and multidimensional CARES model in intervention and practice. “C” implies “Companionship with Chronic Loneliness”; “A” means “Affective Concern behind Projective Anger”; “R” refers to “Reflection of Emotion, Responsibility and Empathy”; “E” implies “Evolving Real Self Constructively”; and finally, “S” means “Soothing and Healing Abandonment Trauma”.

A Critical Introduction to Psychology

Robert K. Beshara (Northern New Mexico College, Española, New Mexico)

In series: Psychology Research Progress
2020.
Hardcover: 978-1-53616-491-6. $195.00.

A Critical Introduction to Psychology is the first scholarly book, in which fifteen critical psychologists analyze chapters from popular Introduction to Psychology textbooks. In their critiques of mainstream (Euro-American) psychology, the authors of this edited volume also envision a pluriversal, transdisciplinary psychology, which is inclusive of critical voices from all over the world.
Advances in Psychology Research. Volume 136
Alexandra M. Columbus

In series: Advances in Psychology Research
Hardcover: 978-1-53614-989-0. $250.00.

In the opening study included in Advances in Psychology Research. Volume 136, the authors analyze significant determinants, such as personality traits and educational level, positive thinking and life satisfaction among parents of preschool children. The study was conducted on a sample of 152 children and 152 parents at the Department of Paediatrics of the University Hospital Rijeka and in the Kindergarten Rijeka in Croatia. Following this, three other studies were conducted. Study one examines the correlations between intergroup evaluations, belonging and self-esteem. Study two assesses the extent to which in-group favouring is associated with elevated belonging. Study three examines belonging as both a predictor and outcome of intergroup evaluations, and the effect of social identity. The authors present evidence that private self-awareness may play a more pivotal role than public self-awareness and self-conscious emotion in cortisol reactivity to social-evaluative threats. Private self-awareness allows for integration of social self-preservation theory with objective self-awareness theory by explaining cortisol reactivity in both social-evaluative and private settings. One investigation seeks to identify the group-based emotions felt by individuals by distinguishing their object for the first time in the context of sport spectators. Following deserved game outcomes, in-group emotions were predicted to show the greatest variability between defeat and victory compared to out-group emotions. The authors examine what gives rise to pro-defendant and anti-defendant biases in punishment decisions, specifically exploring legal judgments about the police officers. We test the influence of perceivers’ political ideology on the mental representations held of law enforcement, and the subsequent impact of those biased perceptions on decisions to punish the officer for possible wrongdoing after viewing video evidence. Society-level data and empirical reports are analyzed, documenting how single and multiply combined marginalized social identities put individuals at even greater risk for experiencing bias in rulings against them. Various social factors that influence assessments of personal control and thwart efforts to maintain impartiality when acting as arbiters of justice in the legal system are also discussed. Continuing, this compilation discusses recent technical issues on the relevance and specific features of clinical experience with psychotic patients, such as bodily countertransference and enactments that repeat the abrupt caesura which took place in the original encounter with the object, not forgetting the intense and delicate working through process that therapists need to carry out in order to make contact with, contain and start to represent the patient’s violent emotions. Clinician and consumers’ views and perspectives of CBT treatment for older people with depression are explored. Focus groups and individual interviews were conducted with mental health professionals and older consumers. Thematic analysis revealed a range of insights embedded within three major themes: (i) understanding and experience of CBT; (ii) challenges and barriers to CBT uptake, and (iii) delivering CBT. The concluding study used a prospective cohort design with two assessments of daily fruit and vegetable intake separated by a period of 6-months. A purposive sample of university employees completed the Regulation of Eating Behavior Scale to assess motives for healthy eating followed by an assessment of daily fruit and vegetable intake plus select demographic items.

Advances in Psychology Research. Volume 137
Alexandra M. Columbus

In series: Advances in Psychology Research
Hardcover: 978-1-53615-534-1. $250.00.

The neurophysiology of electroencephalogram gamma oscillations and their role in brain function, cognitive processes and of altered states of consciousness are described in the opening chapter of Advances in Psychology Research. Volume 137. The second chapter aims to further the understanding of the trauma spectrum disorder conceptualization by examining the content, construct, and criterion validity of this concept, with use of mixed literature reviews and secondary data analyses. The authors go on to provide guidance for the assessment of obsessive-compulsive disorder, addressing the special challenges within long-term care settings and with the increasing geriatric population such as their unwillingness to discuss symptoms because of shame and stigma. Additionally, this compilation reviews the literature on the potential beneficial role of errors, and specifically on students’ adaptive reactions and attitudes towards errors, error climate in classrooms, and on teachers’ adaptive and/or maladaptive strategies in handling students’ errors. The authors continue to review literature on youths’ cyberbullying involvement by explaining what cyberbullying is, risk factors associated with cyberbullying, and the negative psychological and academic outcomes of cyberbullying involvement. The three main theoretical perspectives which are used to explain role modelling are examined, and furthermore, how media influences this process. The final chapter examines patient preferences for dentists. The sample was composed of 1.
In this compilation, the authors examine how recent, massive advances in the technology and reach of the social media, through platforms such as Facebook, Instagram, Twitter and YouTube have spawned a new global debate on the human dimensions of wildlife conservation, with possible impacts on the public perception and application of conservation policy. Moreover, the authors examine the current data analysis tools and technologies that are used to detect extreme online criminal behaviour and the challenges that exist associated with the use of these technologies. Next, in the context of Peters, Sunderland, Andrews, Rapee, and Mattick’s Social Phobia Scale and Social Interaction Anxiety Scale, one study examines support for a bifactor model, factor-based internal consistency reliabilities of the factors in this model, and measurement invariance across gender for the items in the bifactor model. Advances in Psychology Research. Volume 138 goes on to estimate the prevalence and profile of psychiatric comorbidity in a sample of patients who requested treatment for chronic use of cocaine, including 258 patients who met the inclusion criteria evaluated using Psychiatric Research Interview for Substance and Mental Disorders, a semi-structured diagnostic interview that differentiates primary mental disorders from those induced by cocaine. An additional review provides an overview of the advantages and disadvantages of two approaches to health intervention development, followed by a discussion about how the two approaches can be integrated into a more general framework guiding persuasive intervention development.

New Developments in Psychology Research
Louis E. Grove

In series: Psychology Research Progress
Softcover: 978-1-53615-310-1. $95.00.

Researchers have questioned the dilemma of looking the family as a casual social group or as an organization that works and can be measured with the same constructs to estimate labor organizations (Brotheridge, M. and Lee, R. [2006]). In New Developments in Psychology Research, analyzing the congruence between the performance of work organizations and family functioning, the researchers assess two instruments; Beavers Self-Report Family Inventory and Work Environment Scales. The next chapter proposes an innovative research method, Implicit Symbolic Meanings in Online Content, which allows for the analysis of big data according to a mixed approach, taking into account both quantitative and qualitative information and integrating computer science techniques with psychological insights. In the penultimate chapter, recent research on psychosis is examined to understand its relationship to suicide risk. In addition, data is presented to explore the factors involved in the death of 104 adults by suicide. In the closing chapter, integrated care is defined and explained. The necessary competencies and steps for proper workforce development are addressed, and recommendations for securing the place of clinical child/pediatric psychology in integrated health care settings are delineated.

The End of Suicidology: Can We Ever Understand Suicide?
David Lester, PhD (Stockton University, Galloway, NJ, USA)

In series: Psychology of Emotions, Motivations and Actions
Softcover: 978-1-53615-310-1. $95.00.

Periodically, researchers express concern about the research conducted on suicide. Back in 1966, Merton Kahne criticized the quality of the research, but more recently, some scholars have declared that we have reached our limits in understanding and predicting suicide. Dan Reidenberg recently wrote an editorial entitled “Healthy debate, frustration, or a field in chaos?” in which he discussed the failure in the United States to reduce the suicide rate (which in recent years has been rising). Cas Soper has argued that there is no empirical reason to believe that predictors of suicide exist, there is no theoretical foundation for believing that risk factors exist, and there is evidence that suicide may be predictably unpredictable! David Lester reviews and discusses these views in The End of Suicidology: Can We Ever Understand Suicide? He reviews some recent efforts to stimulate the field of suicidology, and finds these attempts lacking. In the major section of the book, Lester presents some recent provocative ideas on suicide that have not hitherto received much attention, such as Brian Mishara’s two component model of suicide with life and suicide tendencies, and David Lester and Steven Stack’s proposal that suicide may be viewed as a drama staged by the prospective suicide. Might these provocative ideas and others stimulate the field?
The Lonely Ape that Told Himself Stories: The Necessity of Stories for Human Survival
Mooli Lahad, Ph.D. (Full Professor of Psychology and Dramatherapy, Tel Hai College and the Community Stress Prevention Center, Israel)
In series: Psychology Research Progress
Hardcover: 978-1-53610-885-9. $95.00.
Softcover: 978-1-53616-184-7. $79.00.

The Lonely Ape that Told Himself Stories is a book that tries to explore the fact that humans are the only animals on this planet that tell stories. Its main argument is that people need to tell stories as a basic need and that without stories, we could not survive as a species. The author explores the origins dating back to the times of cavemen and, through myths, legends and fairytales, touches upon issues such as grief and bereavement, hope and pessimism, male and female dominance, and equality. A significant part is dedicated to the use of stories and narratives in the healing of trauma, as well as how stories act as a modern treatment for PTSD. Lastly, the book explores the future of stories, the flourishing of social media, the issue of internet shaming, the movement towards e-books, and the need for meaning in the post-humanism era. Each chapter ends with experiential activities using stories, story making and other creative methods, including relaxation methods and a collection of stories. The author has been using these methods with clients for over three decades. These activities and processes can be used by an individual or by people in multiple professions to explore and reflect on the topics that are raised in these chapters. The book is a combination of scientific research in psychology, archeology, arts, mythology, culture, neurology, neuroimaging and the modern media, and includes practical psychotherapeutic methods to work in many “impossible situations”.

The Psychology of Handwriting
Barbara Gawda (Associate Professor, University of Maria Curie-Sklodowska, Lublin, Poland)
In series: Psychology Research Progress

“The psychology of handwriting” is an interdisciplinary study of the relationship between psychological characteristics and handwriting. The results presented in the book refer to a possibility of identification of a person’s personality/mental traits on the basis of one’s handwriting. The author has performed very extensive research in the area and has replicated all of her previous studies using the most modern computer software to analyze graphical patterns. The work is carried out diligently with regard to the methodology. The author analyzes handwriting feature sets, not single features, and examines them in the context of different personality dimensions, temperament traits, state and trait anxiety, antisocial personality disorder, affective disorders, and schizophrenia. This book is the result of an extensive work; laborious analysis was carried out on 1174 handwriting samples. The results obtained laid the ground for the formulation of cutting edge conclusions demonstrating that handwriting parameters are not specific to particular personality/temperament traits or mental disorders. Although handwriting is individualized, there is no support for the thesis that psychological traits can be revealed through handwriting characteristics. The book presents a synthesis of numerous concepts spread throughout a variety of research disciplines and is a compendium on Barbara Gawda’s newest research. The author proposes an original cognitive network theory, which summarizes the theoretical background and explains the lack of relationship between psychological patterns and handwriting. Special acknowledgments should be given to this novel concept. The network model of the relationship between psyche and handwriting brings substantial input into the development of interdisciplinary research on handwriting and is important from the perspective of cognitive, forensic, and clinical psychology.
Personality and Individual Differences

Personality Disorders: What We Know and Future Directions For Research
Levi I. Truslow and Justin M. Rahmaan
In series: Psychiatry - Theory, Applications and Treatments
Softcover: 978-1-53615-139-8. $82.00.
e-book: 978-1-53615-140-4. $82.00.
Personality Disorders: What We Know and Future Directions For Research first presents an overview of the current Diagnostic and Statistical Manual of Mental Disorders—5th Edition conceptualisation of personality disorders. After discussing the strengths and limitations of the Diagnostic and Statistical Manual of Mental Disorders—5th Edition’s categorical approach to personality disorder classification, the authors review relevant literature pertaining to the trait and temperamental model operationalised in the Schedule for Nonadaptive and Adaptive Personality. Next, this collection examines dynamic interpersonal processes associated with the etiology and maintenance of personality impairment using an experience sampling methodology and two different data analytic approaches to quantify how patients’ perceptions of self and other influence their symptom expression, emotions and functioning in daily life. The authors study the structural validity of a brief form of the Personality Inventory for DSM-5 in a sample of college students identifying as black/or African American. Consistent with previous research, results suggest that the measure conforms to a higher-order five-factor structure. However, results also indicate that traits are associated with depressive symptoms and alcohol use in different ways than in white samples, suggesting differences in the validity of maladaptive traits across race. The closing chapter aims to discuss the differences between the clinical constructs of psychopathy and antisocial personality disorder. Specifically, psychopathy and antisocial personality disorder are compared and contrasted via a review of the literature. Subsequent implications for the treatment of criminal behavior are described, and a discussion on future research is provided.

The Psychology of Self-Control
August van Looij
In series: Psychology of Emotions, Motivations and Actions
2020.
Softcover: 978-1-53616-576-0. $82.00.
e-book: 978-1-53616-577-7. $82.00.
The Psychology of Self-Control reviews evidence that indicates low self-control is among the most important individual risk factors for criminal offending. A developmental pathway that begins with this risk factor and leads to criminal offending is presented, and treatment recommendations for reducing the risk that low self-control poses for criminal offending are discussed. Following this, the authors seek to explain why young adolescents have an increased likelihood of becoming involved in a troublesome youth group. Social developmental, personal, and situational risk factors are combined under the umbrella of an integrated theoretical framework that stresses the importance of the moral sense as an important mediator in the relationship between adverse developmental conditions, juvenile delinquency, and troublesome youth group involvement. The authors also test the interaction between choosing a violent response, the inability to resist temptation, and exposure to scenario-criminogeneity using a web-based randomized scenario study. The results indicate that individuals who are able to resist temptation are unlikely to choose a violent response independent of scenario criminogeneity. In the penultimate chapter, the psychological and physiological components of self-control are explored. Then, the developmental aspects of self-control, with a special focus on adolescence, are briefly presented. In conclusion, this collection reviews recent research from McCarter and Winn about the role of stakes in English auctions over Amazon.com gift cards, consumer products on eBay, and items in the behavioral laboratory. Then, the results of an experiment manipulating stakes in penny auctions are reported.

Psychotherapy and Counseling

Appalachian Americans: Issues and Concerns for Counseling and Psychotherapy
Daya Singh Sandhu (Professor and Chair of the Educational and Counseling Psychology Department at University of Louisville, KY, US), Jeffrey Parsons, PhD (Associate Professor of Counseling, Lindsey Wilson College, Columbia, KY, US), and Quentin Hunter (Assistant Professor, Department of Counselor Education and Supervision, Lindsey Wilson College, Columbia, KY, US)
In series: Psychology Research Progress
In series: Cultural Studies in the Third Millennium
2020.
Hardcover: 978-1-53616-542-5. $230.00.
Appalachian Americans: Issues and Concerns for Counseling and Psychotherapy, an edited book written by Drs. Daya Singh Sandhu, Jeffrey Parsons, Quentin Hunter, has recently made debut in the fields of multicultural and cross-cultural scholarship and practice as sui generis, a unique book of its kind in many ways. This is perhaps one of the few books that brings counseling needs and mental health problems of the Appalachian people at the forefront for the first time. Generally, Appalachian Americans have been neglected, overlooked, or just forgotten. Since the Civil Rights Act 1964, when culturally different, racially diverse, and people of color started getting attention as an integral part of the American society, multiculturalism became one of the major research interests of social scientists. Most of the multicultural scholarship focused on the cultural identity, cultural worldviews, cultural values of five major racial groups which included European Americans, African Americans, Latina/Latino Americans, Asian Americans, and Native Americans. Appalachian Americans: Issues and Concerns for Counseling and Psychotherapy is very different, unique, and distinct from most of the previous multicultural publications. This book is not based on the racial or cultural identity of the Appalachian people, it is distinctly based on the issues relating to social marginalization, economic and social injustices, and inequities. It focuses much of its attention on the impact of the oppression and marginalization on Appalachian people’s lives. In its very are attempt, this powerful book explores and discusses the effects of geography on the personality and special rules for living of the Appalachian Americans. Appalachian trails also called trails of tears, have been sadly neglected by the multicultural scholarship and institutions of higher learning. While people in the other parts of the country enjoy beautiful sceneries of mountains and their ranges, people from Appalachia call their challenges of life as mountains of problems. The contributors of this book are commended for opening new vistas and visions for the Appalachian people to tread proudly and fearlessly on many unbeaten paths of their lives without worrying about becoming prisoners of mountains. More than ethnic, cultural, and racial conflicts, Appalachian people face more economical and environmental racism and discriminations mostly caused by the big corporations who are hungry for coal from the Appalachia. Many authors have discussed issues relating to social, psychological, and environmental needs of the Appalachian people and offered strategies of social justice and advocacy to deal with poverty, injustices, and social marginalization that is so prevalent in the Appalachian Land. The aim of this textbook is to address the mental health problems and counseling needs of the Appalachian people and it is indispensable for mental health professionals, professional counselors, psychologists, social workers, psychiatrists, and all other people interested in the physical, emotional, and spiritual well-being of the Appalachian people. I hope it will adorn your home library soon.

Social Psychology and Counseling: Issues and Applications
Douglas A. Kleiber, PhD and Edward Delgado-Romero, PhD (Professor, Department of Counseling and Human Development Services, University of Georgia, Athens, GA, US)

In series: Social Psychology Research Progress

2020.
Hardcover: 978-1-53616-548-7. $270.00.

Social Psychology and Counseling offers a rather innovative approach to the social psychological underpinnings of professional mental health services in two respects. First, while psychology has been applied to the subject of mental health in the past, little effort has been directed to link the typical topics of social psychology to the subject of counseling practice. This, this volume examines such traditional social psychological topics as conformity, aggression, interpersonal attraction and prejudice with specific attention to the ways in which extant research and theory in such areas can inform professional practice. Second, most of the authors in this volume are engaged in professional practice while recently completing academic training in scholarly investigations required for a Ph.D. While most of the authors are thus in early stages of their careers, they offer especially contemporary interpretations of both research and practice related to such issues as risky behavior among adolescents, violent tendencies of incarcerated offenders, impacts of social media use on depression, social influences on eating disorders and body dissatisfaction, school violence, and consequences of stereotype threat. Chapters deal with implications for policy as well as psychotherapy, and perspectives from positive psychology are used in considering the enhancement of mental health and interpersonal relations as well as the prevention of mental health problems. Finally, the critical social theory that serves to ground a commitment to social justice in the programs of most of the authors is reflected here in chapters that challenge assumptions of mainstream social psychology particularly around issues of race and culture.

Security Issues

Cybersecurity: Background, Risk Management and Federal Policies
Christian Sievier

In series: American Political, Economic, and Security Issues

Hardcover: 978-1-53615-936-3. $160.00.
e-book: 978-1-53615-937-0. $160.00.

The past decade has seen a rapid increase in both the utility and risk from networked devices. The very tools Americans use to chat with loved ones and make purchases are the same tools which can be turned against them to deny access to services, steal their information, or compromise the digital system they trust. Chapter 1 provides an overview of cybersecurity for policymaking purposes, describes issues that cybersecurity affects, and discusses potential actions
Congress could take. Chapter 2 describes DHS’s cybersecurity missions and how the Department interacts with others to accomplish its missions. Chapter 3 discusses the importance of risk management for cybersecurity, then introduces each of those topics: Information Sharing, Critical Infrastructure Protection and Cybersecurity, Cyber Supply Chain Risk Management, Federal Agency Oversight, and Data Protection and Privacy. The objective of chapter 4 was to determine the extent to which federal agencies have developed policies, procedures, and guidelines for the removal of personal information from cyber threat indicators and defensive measures, pursuant to CISA’s provisions. Chapter 5 highlights the work related to federal programs implemented by DHS that are intended to improve federal cybersecurity and cybersecurity over systems supporting critical infrastructure. Chapter 6 discusses the current state of electric grid cybersecurity, and the interconnected dependency of critical infrastructure with regard to electric sector reliability. The objectives of chapter 7 are to describe the roles of non-school partners and the types of PII shared with them and assess the extent to which FSA policies and procedures for overseeing the non-school partners’ protection of student aid data adhere to federal requirements, guidance, and best practices. Chapter 8 provides an update to the information security high-risk area and identifies the actions the federal government and other entities need to take to address cybersecurity challenges.

General National Security: Background, Issues and Legislation
Joanna Cannon
In series: Government Procedures and Operations
In series: Safety and Risk in Society
This book is comprised of 2018 and 2019 CRS reports on general national security of the United States. The first reports provides a background and status on Overseas Contingency Operations Funding. Since the terrorist attacks of September 11th, Congress has appropriated approximately $2 trillion in discretionary budget authority designated as emergency requirements or for Overseas Contingency Operations/Global War on Terrorism in support of the broad US government response to the 9/11 attacks and other related international affairs activities. The second report examines the military construction funding in the event of a national emergency. Next, there is a discussion on whether the Department of Defense can build the border wall. The last three reports are focused on background and issues for Congress on the Purple Heart, one of the oldest and most recognized American military medals, a guide for Members of Congress on key aspects of the Department of Defense and how Congress exercises authority over it, and finally, a report that lists hundreds of instances in which the US has used its Armed Forces abroad in situations of military conflict or potential conflict or for other than normal peacetime purposes from the years of 1798 to 2018.

United States Embassies: Construction, Security and Evacuations
Toma Jović
In series: Safety and Risk in Society
Hardcover: 978-1-53614-976-0. $195.00.
Following terrorist attacks against the U.S. embassy in Beirut, Lebanon, in 1983, the U.S. Department of State began an embassy construction program—known as the Inman program—to protect U.S. personnel. However, the U.S. Department of State completed only 24 of the 57 planned construction projects, in part due to poor planning, systemic weaknesses in program management, difficulties acquiring sites, schedule delays, cost increases, and subsequent funding limitations. Following the demise of the Inman program in the early 1990s, very few new construction projects were initiated until after the two 1998 embassy bombings in Africa. Following those attacks, the Secure Embassy Construction and Counterrorism Act of 1999 required the U.S. Department of State to maintain a list of diplomatic facilities to be scheduled for replacement based on their vulnerability to attack. The U.S. Department of State determined that diplomatic facilities at more than 180 posts—more than half of U.S. overseas missions—needed to be replaced to meet security standards. By 2016, over 30,000 staff were moved into more secure facilities. From October 2012 to September 2016, State evacuated overseas post staff and family members from 23 overseas posts in response to various threats, such as terrorism, civil unrest, and natural disasters. Overseas posts undergoing evacuations generally experience authorized departure or ordered departure of specific post staff or family members, potentially leading to suspended operations. On September 29, 2017 the U.S. Department of State ordered the departure of nonemergency personnel assigned to the U.S. Embassy in Havana, Cuba, as well as their families, in order to minimize the risk of their exposure to harm because of a series of unexplained injuries suffered by embassy personnel since November 2016.
Social Policy and Welfare

Bureau of Prisons: Risk and Needs Assessment to Reduce Recidivism
Rachel Rowe
In series: Safety and Risk in Society
Softcover: 978-1-53615-128-2. $95.00.
The number of people incarcerated in federal prisons increased dramatically over the past three decades. While research indicates that the expanded use of incarceration during the 1980s and 1990s contributed to the declining crime rate, the effect was likely small, and it has likely reached the point of diminishing returns. Chapter 1 provides information on the use of risk and needs assessment instruments. This includes a discussion of the Risk-Needs-Responsivity principles, which have become the dominant paradigm for reducing the likelihood of recidivism among convicted offenders and concludes with a discussion of the issues policymakers might consider if they debate legislation to expand the use of risk and needs assessment in the federal prison system. The justice system and the Bureau of Prisons also have a responsibility to help rehabilitate that person and help the inmate have a successful reentry back into our communities as reported in chapter 2.

Photovoice: Participation and Empowerment in Research
Éva M. Moya, PhD and Silvia María Chávez-Baray, PhD (University of Texas at El Paso, College of Health Sciences, Department of Social Work, El Paso, TX, US)
In series: Social Issues, Justice and Status
2019.
Hardcover: 978-1-53616-201-1. $160.00.
“Divergent Vistas and Civil Voices for Education, Empowerment, and Critical Thinking” describes Photovoice through the lenses of different communities and countries and discusses the methods and tools that make Photovoice appropriate for cross-cultural use. This book delves into the strategies for using photography, visual arts, and group dialogue to identify community assets and concerns, generate empowerment through participation, and address health disparities and inequities. The book highlights practice-focused applications of examples of community implementation of Photovoice and the use of visual arts. The book also intends to inspire advocates, researchers, clinicians, health and social service providers, policy makers, and multi-sectoral community stakeholders as they engage in collaborative research and practice to address inequities. Readers will be able to undertake a Photovoice Project to facilitate critical consciousness-raising for action to address disparities, discrimination, isolation, and exclusion at the community and societal levels to make the invisible visible.

Poverty Alleviation and Conventional MFIs: Challenges and Prospects
Mohammad Ali Ashraf (School of Business and Economics, United International University, United City, Badda, Gulshan, Dhaka, Bangladesh)
In series: Public Health in the 21st Century
Softcover: 978-1-53615-044-5. $95.00.
e-book: 978-1-53615-323-1. $95.00.
This book presents a rigorous empirical study of various aspects of poverty alleviation in rural Bangladesh. The themes include the trend and structure of rural poverty and the role of microfinance in alleviating rural poverty through participation of the rural poor in NGOs and microfinance institutions (MFIs). It also includes different challenges of participation of rural poor women in NGO-MFIs. In probing those issues, this book employs a different approach of investigation. In comparison with other poverty studies, this book can claim a number of distinct features. First, this book probes the participation behavior of rural poor women who face different socioeconomic, cultural and psycho-attitudinal challenges to participate in NGO-MFIs which ultimately prevented the attainment of the prime objective of poverty alleviation in Bangladesh. In analyzing those issues, this book uses a social psychological theory named the theory of planned behavior (TPB) as a theoretical model upon which the research framework was grounded upon. Second, unlike other studies which are based on relatively small and unrepresentative samples, this book is based on a nationally representative large-scale survey. Third, even though it employs a cross-sectional survey, the study explored in this book attempts to infuse an element of dynamics by employing information on both current and initial condition of resources of households being defined as the resource-base a household had inherited at the time it was formed. This type of data-set helped analyze the dynamics of resource adequacy of the participants in NGO-MFIs which yielded key insights into the challenges of poverty alleviation. Fourth, a concern with the possible influence of microfinance in the economy runs as an intrinsic theme.
throughout the book. In addition to devoting a long chapter of emergence of NGO-MFIs in Bangladesh, the author analyzes
the role of microfinance in its specific contexts in each subsequent chapter, for example, in shaping the trends in poverty,
inequality, resource accumulation and in influencing participation of the rural poor in NGO-MFIs and in affecting the
ability of the rural poor to be free from poverty and to cope with environmental shocks. Some remarks on possible
prospects or recommendations are provided at the end of the book.

**Poverty: Background, Issues and Programs**

*Jadranko Stanislav*

In series: *Hunger and Poverty: Causes, Impacts and Eradication*


Hardcover: 978-1-53615-747-5. $195.00.

Poverty estimates—the number and percentage of persons living in poverty—have been of interest to Congress not only to
gauge the nation’s economic health, but also because they are used to determine funding allocations for a variety of
programs. Chapter 1 provides a synopsis of poverty measurement in the United States, focusing on the following: the
official measure of poverty, which is used to obtain official counts and percentages of the poor; the Supplemental Poverty
Measure, which is used for research purposes only and was developed to improve upon some limitations of the official
measure; and the Health and Human Services (HHS) poverty guidelines, which are used in administering programs for
low-income persons but not to measure the poor population. In chapter 2, the numbers and percentages of those in poverty
are given based on the Census Bureau’s estimates. It also presents a historical perspective as well as information on
poverty for demographic groups (by family structure, age, race and Hispanic origin, and work status) and by state. The
Supplemental Poverty Measure (SPM) is a measure of economic deprivation—having insufficient financial resources to
achieve a specified standard of living. Chapter 3 describes the SPM, how it was developed, how it differs from the official
poverty measure, and the insights it can offer. Chapter 4 explains why targeting funds to persistent poverty counties might
be of interest, how “persistent poverty” is defined and measured and how different interpretations of the definition and
different data source selections could yield different lists of counties identified as persistently poor. Our current welfare
system is failing to deliver results for those that need it most. The current system is a disjointed maze of more than 80
different programs. We need a system that provides more Americans with personalized solutions, real paths out of poverty,
and better opportunities to realize their potential, as detailed in chapter 5.

**Social Security Disability: Background, Benefits and Programs**

*Michael Dimitriadis*

In series: *Retirement Issues, Plans and Lifestyles*


Hardcover: 978-1-53615-747-5. $195.00.

Social Security Disability Insurance (SSDI) provides benefits to nonelderly workers and their eligible dependents if the
worker paid Social Security taxes for a certain number of years and is unable to perform substantial work due to a
qualifying impairment. Chapter 1 provides an overview of the DI trust fund and its current financial outlook. Chapter 2
discusses the rules and processes used to determine eligibility for SSDI and SSI. It also explains how benefit amounts are
computed, the types of non-cash benefits available to individuals who meet SSA’s disability standards, and how each
program is financed. Chapter 3 analyzes the relative importance of factors affecting SSDI benefit receipts and terminations
over the past 30 years. Chapter 4 examines what is known about how coverage and key features of SSDI and PDI compare,
and the potential implications of three distinct proposals to expand employer-sponsored PDI on the Disability Insurance
Trust Fund and various stakeholders. Chapter 5 examines trends in SSA’s transfers and processing times of appealed cases
over the past decade, SSA’s monitoring of efforts to meet processing time goals through case transfers, and any challenges
SSA faces in transferring cases between offices. Chapter 6 is the statement of Elizabeth Curda on SSA disability programs.

**Child Welfare**

**The Child Welfare System: Perspectives, Challenges and Future Directions**

*Boyd Wolfe*

In series: *Social Issues, Justice and Status*

In series: *Social Welfare Policies and Programs - Patterns, Implications and Prospects*


Softcover: 978-1-53615-392-7. $82.00.
e-book: 978-1-53615-393-4. $82.00.

The Child Welfare System: Perspectives, Challenges and Future Directions opens with a description of the empirical
results of a study on bird’s nest parenting as a form of shared parenting. Bird’s nest parenting ensures that children have
both a stable home with the continuity of their prior lifestyle and the chance to live everyday life with both parents. Next,
the authors report the findings of child protection workers’ experiences with and perspectives on child engagement in the
context of child protection assessment in Estonia. Child protective workers make difficult decisions that affect the
everyday lives of children and their families, including removing children and dismantling families, and therefore careful and comprehensive assessment is one of the most significant challenges in the field. The closing chapter considers the connection between agency practices and environments on child outcomes such as length of time spent in foster care, placement changes, and child mental health.

**Family Welfare**

**The Temporary Assistance for Needy Families (TANF) Block Grant: Overview, Legislation and Work Requirements**

*Elmer Nash*

In series: *Congressional Policies, Practices and Procedures*


The Temporary Assistance for Needy Families (TANF) block grant was created in the 1996 welfare reform law (the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, P.L. 104-193). That law was the culmination of a series of legislative changes that altered the rules for providing benefits and services to needy families with children. This book contains important issues regarding TANF. Chapters 1 and 2 provide an overview of TANF financing and rules for state programs. Chapter 3 begins with a brief overview of the history of the AFDC program and the welfare reform debates of the 1960s to the 1990s. That will be followed by a summary of the 1996 welfare reform law and the changes made since 1996. The chapter concludes with a detailed chronology of TANF legislation. Chapter 4 looks at the TANF legislation in the 114th Congress. Chapter 5 responds to some frequently asked questions about TANF. The proposed Accelerating Individuals into the Workforce Act (H.R. 2842), as it passed the House, would provide $100 million in FY2018 funding under the Temporary Assistance for Needy Families (TANF) block grant for demonstrations to test two approaches—subsidized employment and “career pathways” programs—to help disadvantaged individuals as reported in chapter 6. Chapter 7 provides an overview of TANF’s federal rules regarding participation in work and job preparation, shows the trends in the TANF work participation rate (WPR); and examines the degree to which non-employed TANF work-eligible individuals are engaged in welfare-to-work activities. Chapter 8 summarizes the findings from the pre-1996 welfare-to-work experiments as well as the limits of applying those findings to the current policy debate around work requirements. Chapter 9 provides information on the size of the cash assistance caseload. It examines the number of people receiving cash assistance relative to the number of people who meet these programs’ eligibility criteria. Chapter 10 examines the characteristics of the TANF cash assistance caseload in FY2013, and compares it with selected post-welfare reform years (FY2001 and FY2006) and pre-welfare reform years (FY1988 and FY1994).

**Sociology**

**Advances in Sociology Research. Volume 26**

*Jared A. Jaworski*

In series: *Advances in Sociology Research*


Hardcover: 978-1-53615-159-6. $250.00.


Advances in Sociology Research. Volume 26 opens with an attempt to explore the impact and extent of Kuwait’s religious freedom in encouraging the accumulation of social capital for the migration workers’ community in Kuwait. Although Kuwait’s constitution states that Islam is the state religion, numerous faith groups coexist with the majority Sunni and minority Shiite population in Kuwait. Next, the authors discuss the topic of “enlightened” burial reform in the 18th century Habsburg monarchy, with particular regard on Bohemia. Principal arguments are based on the idea of “egalitarian medicalisation strategy” which transcended social class in the new ways of treating the dead. Parental physical abuse is examined as a noxious problem in need of preventative research in China, as well as other places. Prevention may originate from professionals such as teachers, social workers, and police, as indicated by their visiting, helping, and/or punishing. Nevertheless, the effectiveness of professional prevention is unclear. Also discussed in this collection is adolescent pregnancy and early motherhood. The authors question why it is even possible to reproduce at such an early age despite the dangerous risk factors associated with adolescent pregnancies. The evolutionary history of adolescence and female reproductive strategies is analyzed from the viewpoint of evolutionary anthropology in an effort to draw conclusions. The authors also analyze the perceptions of key adults on their role in counseling adolescents to prevent unwanted pregnancies. A qualitative study based on 36 semi-structured interviews was conducted with mothers and health and academic staff in Morelos and Mexico City. Lastly, because Greece has faced the largest refugee and immigrant flows of recent years, one article highlights the efforts of the Hellenic Ministry of Education, Research and Religious Affairs and the Hellenic Government, who prepared and implemented a pedagogically correct method to enable Hellenic schools to welcome the children of refugees in October 2016.
The first chapter of Advances in Sociology Research. Volume 27 addresses epistemological tensions which reflect on the accessibility of minority groups to universities in Brazil, emphasizing the role of Afro-Brazilian women. It focuses on the cosmopolitics of gender and race, taking into consideration the feminist thinkers who have raised the prospect of the intersectionality categories in gender-dominant contexts. Next, the authors create an output-based measure of urban India’s social sustainability to be used as a primary tool to provide guidance for policymakers and to assist in decision-making and monitoring urban strategies. Following this, the formation of a traditional immigrant dwelling in a rural settlement is discussed. The use of internal and external spaces by a family living with the production activities appropriate for rural life are investigated, taking into account factors such as male and female relationships, neighborhood relations, social beliefs and rituals, and celebrations in daily life. This compilation also examines the aspects of discrimination facing children living with disabilities as perpetuated by policy failures, cultural and social beliefs, attitudes and practices that still prevent them from benefiting from educational opportunities. The authors critically examine the state of health care policy in Jamaica in the context of the three leading causes of disease and mortality in the country. Communitarian epistemology is a promising view for analyzing the nature of knowledge we share. The closing chapter focuses on communitarian epistemology in the ambit of social epistemology by focusing on some important perspectives of the ongoing debate.

The opening chapter of Advances in Sociology Research. Volume 28 focuses on the tension that runs throughout the history of humanist philosophy and science from the Renaissance to the present. A practical guide to the new interprofessional leader is examined in the following chapter. Approaches and techniques are offered for effectively fostering interprofessional teams. Next, the key modern issues of museum communication, either between a visitor and an object, or between a visitor and a museum professional, are demonstrated. The authors go on to draw upon a general model of indirect leadership and a summary of two empirical studies. The results indicate that the containing function sensegiving contributes to a favorable organizational result. The authors also highlight the impact of social media platforms and how they have changed the dynamics of Indian society, particularly focusing on recent protests, online suicides, pornography, hacking and infidelity. The penultimate chapter documents the history of social work in Andalusia through its academic and professional development. A short overview of the historical phases in the Danish Welfare State development, including historical compromises between workers and farmers, as well as the Keynesian expansion of the Danish welfare states, is provided in the final chapter.

The Encyclopedia of Human Rights organizes researchers from around the world in human rights and related disciplines and maintains an up-to-date reference work for readers worldwide.

International Perspectives on Social Theory opens with an identification of the characteristics that define contemporary social movements, including: a blurring and overlapping of taxonomical categories, an evolution towards a post-post-political stage, a great variety and hybridization of organizational structures, an extension of activism to new social and cultural dimensions as the postmodern worldview and agendas become hegemonic, a trend to become global through the reticulated architecture of the space of flows and a capacity for action enhanced by the use of new communication technologies. Following this, the authors examine the interrelationship between data privacy, data governance, and ethics management in light of recent data privacy legislation, particularly focusing on how online activities that compromise
personal data have led to the creation of new regulations that are designed to protect individual privacy rights. The current tendency in sociology to favour the naturalizing of discriminations is highlighted, beginning with the example of the axiological discrimination between experts and the groups they themselves stratify. This process priorities the “normal” and moralism. The final study applied the “exit, voice, loyalty and neglect” framework to investigate how the perceived impact of poor housing management, self-efficacy belief and sense of community influence residents’ responses to poor housing management in Hong Kong.

**Modernity, Modernization, and Globalization: Issues and Challenges of the 21st Century**  
Shahid M. Shahidullah, Ph.D. (Department of Sociology, Hampton University, Hampton, Virginia, US)  
In series: Political Science and History  
2019.  
Hardcover: 978-1-53616-323-0. $230.00.  
This book has examined some of the pressing issues and challenges related to modernity, modernization, and globalization of the 21st century. The authors of this book are a distinguished group of social scientists from America’s academia, many of whom are by-cultural and educationally trained both in the East and the West. The book has used historical and comparative perspectives and many extant sources of primary data. The authors have addressed many micro-issues such as modernity and church-state separation, America’s historical role in spreading global modernity, the global expansion of democracy, the rise of a global middle class, the advent of global digital connectivity, and the recent rise of right-wing political parties in the global political landscape. The authors also examined many micro-issues such as modernization and women empowerment in India and Nigeria, the growth of a unique political culture of Islam and modernism in Sierra Leone, the problem of transition to emancipatory values in the post-socialist countries of Central and Easter Europe, rise in religious hostilities in South Asia, need for modernization in dealing with minority females in America’s criminal justice system, and modernity and the evolution of the rights of the disabled in America. The empirical and country studies largely support the theme of the book that modernity is a cultural and civilizational model. The global modernity has been progressing across world societies for more than two hundred years. It has been particularly remarkably advancing since the second half of the twentieth century. The world capitalist economy has become more global, world democracy has expanded, the global middle class has vastly grown, women’s economic and political empowerment have widened, and global digital connectivity has increased. These social and economic transformations are far more fundamental for the future progress of democracy and global modernity. The further spread of global modernity is inevitable and irreversible. The present right-wing ideologies of nativism, localism, nationalism, fundamentalism, and divisiveness in the global political trajectory are a form of the transient and temporal peculiarities.

**Violence Exposure: Perspectives, Gender Differences and Outcomes**  
Szlvia Aideen Xu  
In series: Safety and Risk in Society  
Softcover: 978-1-53614-954-8. $95.00.  
e-book: 978-1-53614-955-5. $95.00.  
Perceptions of vulnerability to violence and crime may be affected by differential exposure to risk and by individual, social and contextual factors. As such, this compilation begins by discussing the structural vulnerability associated with young students and analyzing studies that examine the perceptions of this specific population with respect to crime and victimization. Following this, a systematic review of the literature on the prevalence of violence in couples with homosexual orientation is provided, and the risk factors present in these relationships are addressed. The authors maintain that accurate scientific studies regarding the characteristics and risk factors for IPV in same-sex relationships are necessary in order to reduce prevalence and work on prevention. In one study, the potential impact of six different forms of childhood maltreatment on dispositional mindfulness development is analyzed. A number of parental relationship and resiliency protective factors were also added to the analysis. Survey respondents in this college sample completed indices of dispositional mindfulness, childhood maltreatment, parental relationship qualities, and resiliency factors. Conceptual frameworks are systemised and supported by empirical data related to the impact of child’s exposure to different harmful situations in order to highlight the co-occurrence of multiple forms of violence throughout the life cycle. The authors intend to discuss the importance of interventions based on risk analysis and management, as well as on protective factors that contribute to the child’s well-being. Next, based on empirical research conducted with children victims of domestic violence, the authors examine their experiences and perspectives of domestic violence and the role played by shelters. Implications for intervention and public policies are discussed. The concluding paper presents and discusses the results of an investigation into the depression indicators in Brazilian children and youths, victims of physical violence and/or intrafamilial sexual abuse. The sample was comprised of 1,253 participants, aged 6 to 16 years, 55.2% of which females and 48.2% males.
Special Topics

British Popular Customs: Present and Past
Rev. T. F. Thiselton Dyer
In series: Cultural Studies in the Third Millennium
British Popular Customs: Present and Past by the Rev. T. F. Thiselton Dyer details customs associated with both local and national festivals throughout the year. The book includes less common local festivals from England, Cornwall, Wales, Scotland and Ireland, as well as the more common ones celebrated across the British Isles. This book is for anyone wanting to learn more about an aspect of British history that often gets overlooked by the history books.

Creating Empowerment in Communities: Theory and Practice from an International Perspective
Tokie Anne (Faculty of Medicine, University of Tsukuba, Tsukuba, Japan)
In series: Psychology of Emotions, Motivations and Actions
In series: Social Issues, Justice and Status
Softcover: 978-1-53614-942-5. $95.00.
e-book: 978-1-53614-943-2. $95.00.
This is a new book that will address the ways in which the theory and practice of empowerment can be established and sustained in a variety of community settings and for a variety of target groups, and that may operate at different levels, from individual to societal. In this book, the authors aim to explore and illustrate how inclusive communities can be created and sustained through the development and implementation of empowerment strategies at various levels: Individual, peer, community and societal. The authors utilize the framework of the Dynamic Synergy Model, outlined in Chapter Two, as the context in which we can understand and then actualize the ideals of inclusive communities. In the first two chapters of this volume, the authors outline the concept of inclusive communities, beginning with the initial notion of inclusion, and how that concept has been applied in a variety of settings. They then discuss the topic of empowerment, its theoretical foundations and evolution, including a critique of the concept and the inherent power dynamics of community-based work. In Chapter Two, the authors outline the various levels of empowerment, introduce the Dynamic Synergy Model and delineate a variety of components for establishing and sustaining empowering activities at a variety of levels, in various settings, with evidence or goals for any of the elements outlined for establishing and sustaining empowerment goals with a variety of methods. The authors especially encourage contributions that can illustrate the implementation and/or evaluation of work that exemplifies the Dynamic Synergy Model.

Emotions, Temporalities and Working-Class Identities in the 21st Century
Michalis Christodoulou (University of Patras, Department of Philosophy, Assistant Teaching Staff, Patras, Greece) and Manos Spyridakis (University of Peloponnese, Department of Social and Educational Policy, Tripoli, Greece)
In series: Social Issues, Justice and Status
2019.
Hardcover: 978-1-53616-203-5. $195.00.
In what ways do working-class middle-aged people who have learned to lead their lives through the lens of a traditional institutionalized life course deal with unexpected job loss? What are the differences between shipbuilding workers and supermarket employees regarding their working-class identities? Is there a quantitative way of tapping class stratification among second generation emigrants? How do respectable working-class people experience their transition to homelessness? Finally, in what ways do working-class adolescents deal with their transition to adulthood? These are some of the questions this volume tries to answer by examining how working-class identities are constructed within various temporal and spatial contexts. The research material has been collected by means of both quantitative and qualitative research designs implemented in various locations of Greek society in the last 10 years. Given that Greece is the par excellence country of which the inhabitants went through the hardships of 2010 financial crisis, the authors of the volume are trying to explore the impact this crisis has upon the life-chances of working-class people. In particular, through various methodological approaches (ethnographic interviews, life stories, surveys, biographical interviews, participant observation), authors provide provocative insights on the narrative, emotional and temporal determinants of working-class identity formation in the age of capitalist crises. In addition, this research aims to go beyond the theoretical state of the art in exploring class identities, class action and class formation (Bourdieu, Beck, Giddens, Foucault, E. P. Thomson, S. Hall)
by adopting fresh and challenging theorizations that built upon the concept of time and emotions. Thus, the conceptual elaboration of the data rests upon up-to-date approaches on social time and on emotions that underline that fact that emotions are embedded in social relations which have temporal nature. One of the main working hypotheses of the book is that one can identify the generative mechanisms of working-class identities within the multitude of the emotions that are triggered as a consequence of “felt injustice”. Furthermore, one can understand the tendencies of the society to remain stable or to be transformed during uncertainty periods by examining the temporal peculiarities of specific emotions (resentment, anger, resignation, bereavement, hope).

**Equal Opportunity: Key Issues and Considerations**  
**David Brient**

In series: *Social Issues, Justice and Status*

In series: *Laws and Legislation*


The government documents included in this book are comprised of reports and testimonies from June 2018 to September 2018 on equal opportunity. The first analyzes the federal advertising obligations to small disadvantaged businesses and those owned by minorities and women. The second reviews how public high schools encourage equal athletic opportunities. The third report examines gender-related price differences, which occur when consumers are charged different prices for the same or similar goods and services because of factors related to gender. The fourth report discusses actions needed to ensure workforce diversity strategic goals are achieved. The 21st Century Cures Act includes a provision that the National Institutes of Health (NIH) coordinate policies and programs to promote early research independence and enhance the diversity of the scientific workforce. The final report included here examines the Historically Black Colleges and Universities (HBCUs) and its capital project needs, the funding sources HBCUs use to meet their capital project needs and the extent to which Education helps HBCUs access and successfully participate in the Capital Financing Program.

**Humanitarianism: Global Issues, Challenges and Perspectives of the 21st Century**  
**Joseph Marchesseault**

In series: *Social Issues, Justice and Status*


Softcover: 978-1-53615-109-1. $82.00.
e-book: 978-1-53615-201-2. $82.00.

In this compilation, the authors analyze the decision making processes involved in legal areas, logistical areas and administrative areas of humanitarian aid by describing real life situations in order to demonstrate dilemmas encountered on a daily basis, creating an ethical and humane framework that is efficient and beneficial to the patient. Compliance obligations are a longstanding concern of international humanitarian law. Their modalities include national legislation, relevant treaty accession and ratification, and adherence to customary international law. While the linkage connecting international humanitarian and human rights law is acknowledged, less certain is which body of law assumes primary importance under conditions of neither war nor peace. These issues are discussed, as are options for future State engagement in an institutionalising of humanitarian law compliance. The authors go on to argue that while Libya, Syria and Myanmar have presented us with some overwhelming challenges, this should not deter the international community in responding to violent crimes against humanity. Hence, it is important to review the dynamics of conflict, intervention processes, actors involved, and the international and regional organizations saddled with the duty of intervening. Based on an evaluation carried out by the authors on the quality of life of post-2010 earthquake victims in Haiti (according to the WHOQOL 100 quality-of-life assessment tool) the final article intends to discuss the evolution of the living conditions of the Haitian population eight years after the earthquake, based on the same criteria. To organize the data collected before and after the disaster, the authors focus on health and medical care; education and access to information; income and occupation; safety; environment; physical space and housing; leisure and free time; family and social network; satisfaction with one’s life and perspective of life; spirituality and personal beliefs.

**Moral Development and Behavior: New Research**  
**Colin G Pennington, Ph.D. (Cornell College, Department of Kinesiology, Mount Vernon, IA)**

In series: *Ethical Issues in the 21st Century*


Softcover: 978-1-53615-284-5. $82.00.

The aim of this book is to discuss the concepts, challenges, and successes related to developing character and moral decision making in students of a variety of ages. This book is intended to reach an audience of teachers and teacher educators – partiality physical educators and youth coaches. Readers of this book will be enlightened to new
practices and research methodologies to measure the moral climate of their learning environments and the moral and character trends in their classrooms and learning spaces. The editor’s hope is that readers use the information and suggestions shared in this book to improve their practice by emphasizing the elements which advances the moral decision making skills, social interaction skills, and intrapersonal development of students in their care. This book presents leading-edge research and discusses moral development concepts from the perspectives of both grade-school and university instruction. It considers the unique learning needs of elementary-age children and the diverse learning environments of college-aged students, providing approaches to both contexts. This book is authored by several expert university faculty members specializing in such disciplines as business, kinesiology, teacher education, and educational psychology. The main topics in line with the theme of this book are: defining moral character; university business student moral expression trends; the systematic observation and quantification of positive moral behavior during sport and physical education; youth character development programs; pedagogical curriculum models; and moral development within inclusive physical education.

**Safety Culture: Progress, Trends and Challenges**

*Michel Sacré*

In series: *Safety and Risk in Society*


In this compilation, the authors first analyze three components of safety culture: safety climate, safety values, and culture of prevention. The analysis includes both new empirical results and a review of earlier studies. Following this, Safety Culture: Progress, Trends and Challenges presents a report from ethnographic work at a large grain processing facility in the American Midwest. The grain industry is inherently dangerous with its heavy equipment, confined spaces and explosive environments. Sometimes the companies value efficiency and productivity over worker safety. Additionally, the authors examine differences in safety climate perceptions between permanent and contingent workers and associations to self-reported accidents/injuries in an organisation, considering possible relevant confounders. Possible interventions and strategic efforts as proposed as tools for the promotion and consolidation of organizational mindfulness. These interventions focus signal setting on management level and collective interactions on front-line level. Recommendations for the application in different settings derive from areas of work organization, work design, strategic agenda and value setting, as well as from the promotion of organizational cultural preferences. One paper presents a model that combines theories of organizational learning, human error and situation awareness in sociotechnical task environments. A hypothesis which emerges from this model is that people who possess a questioning attitude in respect to their own contribution to error causation possess a better situational awareness of their sociotechnical work environment. Later, the effect of crew resource management training on the medical personnel of an acute medical unit is investigated, as it is an auspicious method to achieve cultural changes in high risk environments and achieve a positive safety culture. In closing, because a core objective of the International Safety Management Code is advancement of criteria for an effective maritime safety policy, the extent to which the code has been effective is discussed.

**Transformative Words: Writing Otherness and Identities**

*Juhani Ihanus, Ph.D. (Open University and Department of Psychology, University of Helsinki, Finland)*

In series: *Expressive Arts Therapies*

In series: *Cultural Studies in the Third Millennium*


This book is about the transformative functions of words, literature, writing, and bibliopoesy therapy, approaching the subject through narrative and cultural psychology, storytelling, and shareable meaning making. The dialogic mind is described as trembling in a textual web of memories, metaphors, fantasies, transferences and poetic language, and even revising the different versions of the unconscious. The backgrounds, aims, methods, and processes of bibliopoesy therapy are elaborated by presenting how storytelling the self and the writing of otherness and identities enhance personal development, attune emotionally, autobiographically, and socially meaningful experiences, bridging knowledge and emotion and supporting growth and transformation. Juhani Ihanus, PhD, is Adjunct Professor of Cultural Psychology (University of Helsinki), and Art Education and Art Psychology (Aalto University). He is a pioneer of European bibliopoesy therapy, and a prolific author for over 450 publications in the fields of psychology, culture, literature, and visual arts.
Sports

Essential Topics in Baseball: From Performance Analysis to Injury Prevention

Erik Welch

In series: Sports and Athletics Preparation, Performance, and Psychology

2020.

Hardcover: 978-1-53616-533-3. $160.00.
e-book: 978-1-53616-534-0. $160.00.

Baseball is a game of tabulation and tracking. While baseball has a long and storied history of analyzing performance, it was not until recent history that analytical approaches have been applied to the medical and physical aspects of baseball. In today’s game, at every level, baseball players are tracked for factors beyond wins and losses, to help maintain player health, or in an attempt to improve performance. Essential Topics in Baseball: From Performance Analysis to Injury Prevention explores the future of baseball monitoring in the context of being able to handle, interpret, and extrapolate predictions from the masses of data being collected. Following this, the authors aim to determine whether upper extremity strength is predictive of injury, how upper extremity strength can be reliably and practically tested in the clinic, and whether or not strengthening programs will have an effect on upper extremity strength ratios, as well as compare and contrast current throwing programs found in the literature. Additionally, ten right-handed college baseball batters participated in an experiment. They swung a bat towards five imaginary impact locations of different heights and lateral positions in the strike zone. They also hit a ball mounted on a tee stand placed in the strike zone which corresponded to the same five locations. The process was repeated seven times for each location, all of which were randomly assigned. Movements of the bat and ball were captured by an optical motion capture system at 250 Hz and 3-dimensional coordinates of the bat and ball were calculated. The freely available Statcast Trackman data provides continuous location coordinates for individual pitches using Doppler radar. This detailed spatial information can be employed to visualize a batter’s ability across regions in and around the strike zone. As such, the authors summarize classical geostatistical methodology and show how it can be applied to real data. In another study, the authors explore hitting a stable ball mounted on a tee stand, rather than hitting a flying ball, to focus on the importance of vision in executing a batter’s prepared or preplanned hitting movement for an impact location. This is achieved by eliminating the necessity of processing visual information regarding the ball’s flight to predict the time and location of the pitch’s arrival and modulate the movement with respect to the flight of the pitch. The closing chapter examines the long history of tobacco use in baseball that dates back to the 19th century and the creation of the sport. Athletes and coaches initially used spit tobacco as a way to keep their mouths moist during dusty games and to alter the baseball to improve grip and break.

Terrorism

Encyclopedia of Terrorism (7 Volume Set)

Peter Blom and Nora Berg

In series: Terrorism, Hot Spots and Conflict-Related Issues

2019.

Hardcover: 978-1-63483-327-1. $1350.00.

This 7 volume set covers a wide range of topics, including: · information sharing · ricin · the Islamic State · mental terrorism.

The Boko Haram Terror: Adversary to the Wellbeing of Nigerian Kids

Miracle A. Adesina (Cephas Health Research Initiative Inc, Ibadan, Nigeria), Kehinde K. Kanmodi (Cephas Health Research Initiative Inc, Ibadan, Nigeria) and Joav Merrick, MD, MMedSci, DMSc (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel; Division of Adolescent Medicine, KY Children’s Hospital, Department of Pediatrics, Lexington, Kentucky, USA; National Institute of Child Health and Human Development, Jerusalem, Israel; Division of Pediatrics, Hadassah Hebrew University Medical Centers, Mt Scopus Campus, Jerusalem, Israel; School of Public Health, Georgia State University, Atlanta, Georgia, USA)
Nigeria is the most populous nation in Africa, made up of multiple ethnic groups, cultures, and languages. She is a nation with world-acclaimed writers, scientists, and physicians who have created record breaking and award-winning contributions to their fields. Sadly, this great and mighty nation is plagued and attacked almost every week by militants from a deadly, brutal, barbarous, vicious, and dangerous sect called Boko Haram. Boko Haram is the most dangerous terrorist group in Nigeria, the actions of which have led to the injury and/or death of many people. This group evolved from a non-violent nuisance group to a brutal, cruel, and savage one. Boko Haram’s activities have had and still have negative, destructive, and devastating effects on different aspects of Nigeria’s economy. The impact of Boko Haram’s terrorism on security, health, finance, tourism, and education in Nigeria and its people is the topic of focus in this book. Furthermore, the Boko Haram sect is a leading group that breaches the rights of children. It is common knowledge that the children are the future of any nation, and they need to be trained properly for a promising future. Ultimately, the individuals or groups breaching the rights of children need to be punished appropriately, for a better and glorious future for the children of Nigeria.

Understanding the War on Terror: Perspectives, Challenges and Issues
Riku Flanagan

The opening chapter helps readers to understand the ethnocentric discourses revolving around the would-be supremacy of the US and the UK— and Anglo-Saxons— over other cultures. This ethnocentrism, we probe, flourishes just after 9/11 and the War on Terror. The following chapter centers on a philosophical discussion that relates the international geopolitics with the sociology of terrorism. One can kill terrorists, one can take back the land they conquered, but how does one kill an idea? The authors delve into precisely that matter and attempt to demonstrate that, although winning the war on terror in a proper, physical sense, is conceivable, winning the war against the idea of terror may be impossible, because the circumstances that gave birth to that particular idea in the first place represent the very characteristics of the world we live in. The penultimate section aims to evaluate the role of sophisticated technologies in counteracting terrorism on the Internet, directly linked to the development of a civil society. The concluding chapter analyzes the European Union (EU) experience of countering terrorist propaganda, using the example of the so-called “Islamic State” (IS) on the Internet and especially via social media. The author considers the system of EU bodies responsible for countering terrorism in social networks, exploring cases of blocking terrorist content using the redirect method, campaign and message design.
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<td>$385</td>
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* Quoted prices already include the cost of standard shipping and handling to destinations worldwide. Prepayment is required. Currency is U.S. dollars.
# 2020 E-package Information

**ENGINEERING AND TECHNOLOGY**  (3 Titles. $825)
- International Journal of Construction Project Management
- Journal of Manufacturing Technology Research
- Journal of Nature Science and Sustainable Technology

**PHYSICAL SCIENCES**  (5 Titles. $2,400)
- Chaos and Complexity Letters
- International Journal of Chemical Modeling
- International Journal of Mathematics, Game Theory and Algebra
- Journal of Combinatorics and Number Theory
- Pacific Journal of Applied Mathematics

**ECONOMICS AND POLITICS**  (10 Titles. $8,000)
- Current Politics and Economics of Africa
- Current Politics and Economics of Europe
- Current Politics and Economics of Northern and Western Asia
- Current Politics and Economics of Russia, Eastern and Central Europe
- Current Politics and Economics of South and Central America
- Current Politics and Economics of South, Southeastern, and Central Asia
- Current Politics and Economics of the Middle East
- Current Politics and Economics of the United States, Canada and Mexico
- International Journal of Energy, Environment, and Economics
- Russia, China and Eurasia - Social, Historical and Cultural Issues
- International Journal of Energy, Environment, and Economics
- Russia, China and Eurasia - Social, Historical and Cultural Issues
- White House Studies

**MEDICAL SCIENCES**  (10 Titles. $3,700)
- Brain, Body, Cognition
- International Journal of Child Health and Human Development
- International Journal of Clinical Dentistry
- International Journal on Disability and Human Development
- International Public Health Journal
- Journal of Alternative Medicine Research
- Journal of Pain Management
- Journal of Stem Cells
- World Heart Journal

**SOCIAL SCIENCES**  (2 Titles. $625)
- International Journal of Ethics
- Journal of Contemporary Athletics