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Clinical Cases in Implant Dentistry covers all essential topics within the subject. It presents 49 actual clinical cases, accompanied by academic commentary, that question and educate the reader about essential topics in implant dentistry, encompassing diagnosis, surgical site preparation and placement, restoration, and maintenance of dental implants.

The unique case-based format supports problem-based learning, and the book promotes independent learning through self-assessment and critical thinking. It is highly illustrated with full-color clinical cases.

About the Authors

Dr. Nadeem Karimbux is Professor of Periodontology and Associate Dean of Academic Affairs at Tufts University, School of Dental Medicine in Boston, Massachusetts, USA.

Dr. Hans-Peter Weber is Professor and Chair of the Department of Prosthodontics at Tufts University, School of Dental Medicine in Boston, Massachusetts, USA.
Dentistry has been undergoing enormous changes, and the field of endodontics has certainly been at the forefront. Recent advances in technology, materials and equipment have changed the way endodontics is practiced today, thereby facilitating treatments with greater efficiency, precision, and success, ultimately leading to better outcomes. *Current Therapy in Endodontics* encompasses the recent discoveries and applications for this field in one clinically relevant volume.

- Evidence-based presentation of recent advances in the field of endodontics
- Objective comparison of materials and instruments on the market
- Tables present key data and instruction for quick viewing and comprehension

**About the Author**

**Priyanka Jain** has more than 15 years of clinical and teaching experience, having worked in India, UK, Qatar, and the USA. She is also the author of the book *Essentials in Dentistry*. At present, she is residing and working as a Specialist Endodontist in Dubai, UAE.
Dental Practice Transition: A Practical Guide to Management, Second Edition, helps readers navigate through options such as starting a practice, associateships, and buying an existing practice with helpful information on business systems, marketing, staffing, and money management.

A unique comprehensive guide for the newly qualified dentist, this second edition features new and expanded chapters on dental insurance, patient communication, personal finance, associateships, embezzlement, and dental service organizations. An experienced editorial team provides a fresh, balanced and in-depth look at this vitally important subject.

About the Author

Dr. David Dunning has provided management consulting services for many years. He has been on the faculty of the College of Dentistry, University of Nebraska Medical Center, for more than 30 years, teaching and conducting research in behavioral science and practice management.
Diagnosing Dental and Orofacial Pain
A Clinical Manual
Alex J. Moule & M. Lamar Hicks
Faculty of Dentistry, Kuwait University, Kuwait; University of Maryland Dental School, USA


Know the right questions to ask when a patient comes to you in pain

*Diagnosing Dental and Orofacial Pain* approaches a complex topic in a uniquely practical way. It stems from the philosophy that to diagnose orofacial pain properly, a clinician needs not only to be thoroughly conversant with the particular pain states that can exist, but also know the questions to ask a patient who presents with such pain, and the confirmatory testing that then need to be carried out to confirm the diagnosis. It aims at helping the student and practitioner understand this diagnostic process, not by describing the various painful conditions, but by addressing the exact questions that need to be asked and by analyzing verbal and non-verbal responses to these.

The *Manual* provides:

- Hundreds of full-colour images to support the text
- A companion website with additional case studies and further tips on examination and diagnosis
- Contributions from international experts in the field of orofacial pain

Based on decades of teaching experience, *Diagnosing Dental and Orofacial Pain* is an ideal teaching manual for both dental and medical undergraduate and postgraduate students, but will equally serve as a reference handbook for dental, medical and allied health practitioners who are confronted with patients suffering a wide range of dental and orofacial pain problems.

About the Author

**Alexander Moule** (University of Kuwait) Associate Professor and Discipline Head in Endodontics at Kuwait University. Alex Moule has spent over fifteen years in full-time tenured academic positions at a number of universities and a further twenty years in honorary teaching positions at other institutions, including the University of Queensland where his current position is Associate Professor. He is familiar with the needs of dental and medical students, having for many years provided orofacial pain diagnosis lectures to students at The University of Queensland, and as an invited lecturer at other Universities, including Latrobe University in Melbourne. The material for this *Manual* has been obtained from observation of patients and reading during forty years in dental practice, including academic, general and government practice. During that time Dr Moule spent twenty-five years in full time endodontic practice, including 10 years as the principal and owner of a large endodontic practice, playing a regular role in diagnosing orofacial pain on a referral basis.

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This is a unique new work in this challenging area of dentistry. Previous texts have focused on the classification and management of dental deviations, but an understanding of their etiology is crucial to achieving successful outcomes. Inger Kjaer, a leading authority in orthodontics and dental embryology, draws on a wealth of experience to show how human embryology and foetal pathology provide unique knowledge for postnatal diagnosis and treatment. Examples are illustrated with 500 colour photographs, and the clinical relevance and implications are highlighted at the end of each chapter emphasising where theory intersects with practice. This is a key text for specialist trainees in orthodontics, paediatric dentistry and oral medicine, and an invaluable reference for researchers and pre-registration students in dentistry and other professions dealing with craniofacial anomalies.

About the Author

Inger Kjaer is Professor of Orthodontics at the University of Copenhagen. Her scientific publications number more than 200 and she teaches graduate and postgraduate students in dentistry and medicine and acts as course director for medical and dental staff on all levels. Professor Kjaer co-wrote the The Prenatal Human Cranium: Normal and Pathological Development, published by Munksgaard in 1999.
Orthognathic surgery is surgery to correct conditions of the jaw and face related to structure, growth, sleep apnea, TMJ disorders, malocclusion problems, or other orthodontic problems that cannot be easily treated with braces. It is performed by either an oral and maxillofacial surgeon, plastic surgeon, or ENT in collaboration with an orthodontist. It often includes braces before and after surgery and retainers after the final removal of braces, and is often needed after reconstruction of cleft palate or other major craniofacial anomalies. Careful coordination between the surgeon and orthodontist is essential to ensure that the teeth will fit correctly after the surgery.

This is a comprehensive specialist clinical manual of orthognathic surgery for both trainee and practicing orthodontists and oral and maxillofacial surgeons, edited by two highly capable and qualified consultants, with a team of international contributors.

The book is divided into two parts: the first looks at principles and planning, the second at practice. The content is enhanced throughout by over 400 figures and many cases studies.

About the Authors

Farhad B. Naini is a Consultant Orthodontist at St George’s Hospital and Medical School and author of Facial Aesthetics.

Daljit S. Gill is a Consultant Orthodontist at the Eastman Dental Hospital, with an Honorary Consultant appointment at the Great Ormond Street Hospital, UK and author of Orthodontics at a Glance. Farhad and Daljit are co-authors of Orthodontics: Principles and Practice.
This pioneering book is uniquely dedicated to the science of tissue engineering and regeneration in dentistry. It presents the growth of knowledge and advancement in this specialist field along with laboratory considerations for the dental researcher. Furthermore it offers detailed coverage of the basic underlying principles and scientific evidence as well as highlighting the practical applications via ‘protocol’ boxes throughout. A must-read for researchers and specialist clinicians in tissue engineering, oral biology, dental materials science, periodontology and oral surgery.

**About the Authors**

**Professor Rachel J. Waddington** is Associate Dean for Engagement and Enterprise and Professor in Oral Biochemistry, School of Dentistry, Cardiff University, UK.

**Professor Alastair J. Sloan** is Vice-Dean of Research and International and Professor in Bone Biology and Tissue Engineering, School of Dentistry, Cardiff University, UK.

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A Practical Guide to Vulval Disease: Diagnosis and Management
Fiona M. Lewis, Fabrizio Bogliatto & Marc van Beurden

ISBN: 978-1-119-14605-6 | JAN 2017 | 256PP

This book is a practical guide to the diagnosis and management of vulval disorders. As vulval diseases are different to those of the rest of the skin patients with vulval disease present a large unmet need, often with delays in diagnosis due to a lack of training for physicians. This practical guide provides the specialist knowledge required for diagnosis and treatment of these conditions at trainee and specialist level. It contains key information about diagnosis, investigation and basic management, with a section on signs and symptoms which guides the reader to the correct chapter for the treatment of that disease. The experienced authors include updated classification and terminology of vulval disease with an explanation of how this should be useful in clinical practice, and guidance as to when the patient should be referred on to a specialist.

About the Authors

Dr Fiona Lewis, St John’s Institute of Dermatology and Wexham Park Hospital (Frimley Health Foundation Trust), UK.
Dr Fabrizio Bogliatto, Chivasso Civic Hospital in Turin, Italy.
Dr Marc van Beurden, Netherlands Cancer Institute.
Lecture Notes: Clinical Anaesthesia, 5th Edition provides a comprehensive introduction to the modern principles and practices of anaesthesia for medical students, trainee doctors, anaesthetic nurses and other health professionals working with anaesthetists. This fifth edition has been fully updated to reflect changes in clinical practice, guidelines, equipment and drugs.

Key features include: a new chapter on the roles of the anaesthetist; increased coverage of the peri-operative management of the overweight and obese patient, as well as an introduction to the fundamental aspects of paediatric anaesthesia; coverage of recent developments within the specialty, including the rapidly growing recognition of the importance of non-technical skills (NTS), and the management of some of the most common peri-operative medical emergencies; links to further online resources; a companion website at www.lecturenoteseries.com/anaesthesia featuring interactive true/false questions, SAQs, and a list of further reading and resources.

There are full-colour diagrams and photographs, and learning objectives at the start of each chapter support easy understanding of anaesthesia, allowing confident transfer of information into clinical practice.

About the Authors

Matthew Gwinnutt MB ChB (Hons) FRCA, Specialist Trainee in Anaesthesia, Health Education North West, Mersey School of Anaesthesia, UK.
Carl Gwinnutt MB BS MRCS LRCP FRCA, Emeritus Consultant, Salford Royal Hospitals NHS Foundation Trust, UK.
Clinical Investigations at a Glance provides an up-to-date, evidence-based overview of diagnostic investigations, looking at their choice, importance and interpretation for commonly presenting symptoms and conditions.

Designed to help develop the evidence-based use of investigations and interpret results properly, the book provides a unique perspective on many critical issues in medical testing, with the aim of improving diagnostic accuracy and reducing unnecessary tests or harm.

Clinical Investigations at a Glance is structured in three parts: an overview of tests; common presentations (such as chest pain, nausea and vomiting, weight loss and anaemia); and conditions organized by body system, such as cardiovascular disease, respiratory disease and nephrology.

Key features include:
• How to interpret investigations, using high quality illustrations to compare normal and diseased results
• Evidence-based, including references
• How to select the most appropriate investigation, the accuracy of tests and how to manage incidental findings

About the Authors

Jonathan Gleadle is Professor of Medicine at Flinders University and Consultant Nephrologist at Flinders Medical Centre, Adelaide, Australia.

Jordan Li is Senior Lecturer at Flinders University and Consultant Physician at Flinders Medical Centre, Adelaide, Australia.

Tuck Yong is Consultant Physician, Adelaide, Australia.
High-resolution endoscopy and narrowband imaging have revolutionized the field of endoscopic imaging.

This new edition of an award-winning atlas provides an outstanding collection of images, videos and expert diagnostic guidance to enhance decision making. The book is divided into three main parts: the basics of NBI; its clinical applications; and an atlas of 2,000 color images. The accompanying website features more than 80 video clips to give a complete sense of how HRE and NBI work, including during therapeutic procedures. Expertly guiding the reader through the latest advances, this book facilitates mastery of the field, and provides an up-to-date reference for gastroenterologists and endoscopists to improve their practice.

About the Author

Jonathan Cohen is Clinical Professor of Medicine, NYU School of Medicine, Concorde Medical Group, New York, NY, USA. Dr. Cohen graduated from Harvard College and Harvard Medical School. He is a past President of the New York Society for Gastrointestinal Endoscopy.
Working practices for Head and Neck (HN) diagnostic and clinical teams have changed dramatically over the past 15 years with highlighted importance on specialist Multidisciplinary Teams (MDT) including radiologists and cytopathologists. To achieve high levels of diagnostic accuracy in this modern working environment, special training and commitment to cytopathology are required in addition to histopathology.

Cytopathology of the Head and Neck: Ultrasound Guided FNAC supports the learning of new skills expected of practicing pathologists by providing a comprehensive approach to cytopathology, including performing FNAC and on site interpretation. New to this edition is coverage of ultrasound (US) guidance the use of which has emerged as an essential adjunct to either Fine Needle Aspiration Cytology (FNAC) or needle core biopsy, and is expected to increase. US combined with US guided FNAC is now recommended as the investigation method of first choice for HN lesions for evaluating regional metastases in HN patients, for both those with and those without palpable lumps.

This second edition also includes:
• Expanded coverage of clinical images of head and neck masses
• Clear presentation of FNAC diagnostic features with images
• Over 200 ultrasound images and explanatory text
• Clinical management algorithms
• Examples of diagnostic of pitfalls and complications in FNAC
• Medicolegal issues in head and neck cytopathology practice

This timely book fills the training gap required for pathologists and offers a team approach to head and neck lesions, with valuable input from radiologists, ENT (ear, nose, and throat) surgeons, oncologists, and medico-legal experts. This new edition reflects the emergent multidisciplinary approach to head and neck practice.

About the Author
Dr Gabrijela Kocjan is Senior Lecturer/Honorary Consultant, Department of Cellular Pathology, University College London.
Emergency Point of Care Ultrasound
2nd Edition

Jim Connolly, Anthony Dean, Beatrice Hoffmann & Bob Jarman
Consultant in Emergency Medicine, Newcastle General Hospital, Newcastle Upon Tyne, UK; Assistant Professor of Emergency Medicine, University of Pennsylvania, Philadelphia USA; Ultrasound Director, Emergency Physician, Johns Hopkins University, Baltimore USA; Consultant in Emergency Medicine, Teesside University, Middlesbrough, UK


This book is a brand new and completely revised edition of *Emergency Ultrasound* (Brooks, Chan and Connolly, BMJBooks/Blackwell, 2004). The editors are leaders in the development of the modality, and have assembled a team of experts to write the individual chapters in this authoritative text, covering all areas of this exciting and rapidly-developing field. The book also covers the basic ultrasound applications meaning it is ideal both for practitioners who are just beginning in ultrasound scanning and those who have many years of experience.

Each chapter begins with an introduction to each focused scan and a detailed description of the method for obtaining the images, followed by examples of normal and abnormal scans. Added features for each chapter are pitfalls of the technique and valuable pearls from experienced users, together with a summary listing the most up to date evidence. An accompanying website will augment the information with video clips showing probe positions and orientations. The full bibliography will also be available online.

About the Authors

**Jim Connolly**, Consultant in Emergency Medicine, Newcastle General Hospital, Newcastle Upon Tyne, UK.

**Anthony Dean**, Assistant Professor of Emergency Medicine, University of Pennsylvania, Philadelphia USA.

**Beatrice Hoffmann**, Ultrasound Director, Emergency Physician, Johns Hopkins University, Baltimore USA.

**Bob Jarman**, Consultant in Emergency Medicine, Teesside University, Middlesbrough, UK.

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The first comprehensive, authoritative review of one of the most fundamental and important issues in infection control and patient safety: hand hygiene. Developed and presented by the world’s leading scholar-clinicians, *Hand Hygiene* is an essential resource for all medical professionals.

It fully integrates World Health Organization (WHO) guidelines and policies and offers a global perspective in tackling hand hygiene issues in developed and developing countries. It covers basic and highly complex clinical applications of hand hygiene practices and includes novel and unusual aspects and issues in hand hygiene such as religious and cultural aspects and patient participation. Features guidance at the individual, institutional, and organizational levels for national and worldwide hygiene promotion campaigns.

**About the Authors**

**Didier Pittet** is Professor, Epidemiologist, and Director of the Infection Control at the University of Geneva Hospitals.

**John M. Boyce** is Director, Hospital Epidemiology and Infection Control, Yale-New Haven Hospital and Clinical Professor of Medicine at Yale University.

**Benedetta Allegranzi** is a specialist in infectious diseases and tropical medicine at the World Health Organization and University of Geneva.
Concise, accessible, and easy-to-read, this new title in the popular *How To* series is designed to support nutritionists, dietitians, nurses and other healthcare professionals to facilitate healthy lifestyle change through group education. *How to Facilitate Lifestyle Change* covers the entire group education process, from initial planning, to delivery and evaluation. Topics include everything from agreeing aims and objectives and structuring a session, to considering practical aspects such as setting, managing challenging group members and participant expectations, as well as evaluating and refining a session plan for future use. It also provides an overview of the key evidence base for group learning, relevant theories and models, peer support, and e-learning opportunities.

**About the Authors**

**Amanda Avery**, Senior Fellow of the Higher Education Academy Assistant Professor in Nutrition and Dietetics, The University of Nottingham, UK.

**Kirsten Whitehead**, Senior Fellow of the Higher Education Academy, Assistant Professor in Dietetics, The University of Nottingham, UK.

**Vanessa Halliday, PhD, RD**, Senior Fellow of the Higher Education Academy Lecturer in Public Health, The University of Sheffield, UK.
This new edition contains a radically expanded chapter contents list presented in four clear sections: coronary interventions; interventional pharmacology; structural heart interventions; and endovascular therapy. It includes 46 new chapters, including the latest advances in bioresorbable coronary stents, advanced transcatheter aortic valve replacement, MitraClip, new transcatheter mitral valve interventions, and more. Chapters are templated for rapid referral, beginning with pathophysiological background and relevant pathology, moving to mechanisms of treatment, device description, procedural techniques, follow-up care, and ending with risks, contraindications and complications. There are multiple-choice questions at the end of each chapter for self-assessment and 19 procedural videos, hosted on a companion website.

About the Authors

George Dangas, Professor of Medicine, Mount Sinai Hospital, New York and Center for Interventional Vascular Therapy, Columbia University Medical Center, New York.

Carlo Di Mario, Professor of Cardiology, National Heart and Lung Institute, Imperial College, London and Consultant Cardiologist, Department of Invasive Cardiology, Royal Brompton Hospital, London.

Nicholas Kipshidze, Director, Endoluminal and Molecular Interventions, Lenox Hill Heart and Vascular Institute, New York.
Highly illustrated, comprehensive, and accessible Ophthalmology Lecture Notes is the ideal reference and revision guide to common eye problems and their diagnosis and management. Beginning with overviews of anatomy, history taking, and examination, it then covers a range of core ophthalmic conditions, including a new chapter on paediatric ophthalmology. All content has been thoroughly updated since the last edition and includes: over 200 diagrams and photographs; a range of core clinical cases in chapter 20 demonstrating the clinical context of key conditions; and learning objectives and summary of key points in each chapter.

Ophthalmology Lecture Notes is perfect for developing knowledge for clinical practice or revision in the run-up to examinations, and uses a systematic approach to provide medical students and junior doctors with all the tools they need to manage clinical situations. It is also useful for optometrists in training, helping them develop a sound understanding of clinical ophthalmology.

About the Authors

Bruce James, Consultant Ophthalmologist, Stoke Mandeville Hospital, Buckinghamshire.

Anthony Bron, Professor Emeritus, Nuffield Laboratory of Ophthalmology, John Radcliffe Hospital, Oxford.

Manoj V Parulekar, Consultant Ophthalmic Surgeon, Department of Ophthalmology, Birmingham Children’s Hospital, UK.
Sexual dysfunction affects men of all ages and incidence rates are expected to double by 2025 resulting in a major health burden. Though normal sexual function is an important aspect of health and well-being, sadly, this common condition still carries an associated stigma. As a result, affected men are often reluctant to approach their doctor and, instead, may live for many years with sexual dysfunction, often to the detriment of their personal lives.

*Male Sexual Dysfunction: A Clinical Guide* covers all the common problems encountered by the clinician in this rapidly expanding and developing field. With full color throughout, this easy-to-read guide provides a comprehensive and systematic approach to patient management. Packed with key features, every chapter contains flow diagrams and algorithms, key points, clinical pearls, “what to avoid” boxes, and numerous tables, graphs and photographs. This book provides:

- Comprehensive focus on the core clinical areas of physiology/pharmacology, investigation, diagnosis, management and surgical options
- Coverage of all treatment pathways, including psychological, pharmacologic and surgical
- A straightforward, logical approach to clinical management
- An experienced and international editor and contributor team

Expertly-written, this book is the perfect resource for urologists and general practitioners with an interest in this highly topical area, as well as those about to undergo their urology trainee examinations.

**About the Authors**

**Suks Minhas MD**, is a Consultant Urologist at UCL’s Institute of Urology specialising in andrological surgery. He is supra-regional chairman for penile cancer services at university College Hospital London and has contributed to over 200 published abstracts, papers and book chapters. Dr Minhas is Editor-in-Chief of the *Journal of Sexual Medicine*. Dr Minhas was chairman of the British Association of Urological Surgeons Section of Andrology and 2011 was awarded the Karl Storz Telescope award in 2011 for his outstanding contribution to the field.

**John P. Mulhall, MD** is Director, Male Sexual and Reproductive Medicine Program, Memorial Sloan-Kettering Cancer Center, New York, USA.
Metabolism at a Glance presents a concise, illustrated summary of metabolism in health and disease. This essential text is progressively appropriate for introductory through to advanced medical and biochemistry courses. It also provides a succinct review of inborn errors of metabolism, and reference for postgraduate medical practitioners and biomedical scientists who need a resource to quickly refresh their knowledge.

Fully updated and extensively illustrated, this new edition of Metabolism at a Glance is now in full colour throughout, and includes new coverage of sports biochemistry; the metabolism of lipids, carbohydrates and cholesterol; glyceroneogenesis, α-oxidation and ω-oxidation of fatty acids. It also features the overlooked “Krebs Uric Acid Cycle”.

Metabolism at a Glance offers an accessible introduction to metabolism, and is ideal as a revision aid for students preparing for undergraduate and USMLE Step 1 exams.

About the Author

Jack Salway was Senior Lecturer within the Faculty of Health and Medical Sciences at the University of Surrey until 2008.
Describing and differentiating the different tics, jerks, spasms and tremors that present as movement disorders is frequently less than straightforward. Then formulating a diagnosis to account for these movements, and to develop a management plan, is a further challenge.

Non-Parkinsonian Movement Disorders provides the tool kit physicians need to effectively identify the movement disorders their patients suffer. Starting from the various movement phenomena with which patients present, and using clinically proven approaches, the stellar cast of authors provide a practical guide to diagnosis and management.

Clinical in approach, practical in execution, Non-Parkinsonian Movement Disorders is designed to help doctors better help their patients.

About the Authors

Deborah Hall, Rush University Medical Center, Chicago, is the recipient of an NIH K23 career development award to investigate the prevalence of FMR1 repeat expansions in various movement disorders.

Brandon Barton, MD Department of Neurological sciences, Rush University Medical Center, Chicago.
This updated edition of *Painless Evidence-Based Medicine* presents basic concepts and application of research statistics in simple and practical manner creating an introductory approach to the complex and technical subject of evidence-based medicine from experienced teachers.

This is a simplified introductory approach to the complex and technical subject of evidence-based medicine, from experienced teachers who approach learning from the vantage point of clinical questions on therapy, diagnosis, prognosis or harm, rather than the framework of study designs. It includes tables and boxed case studies throughout, highlighting key topics, or difficult issues, in an easy-to-read format, and emphasizes applicability of EBM, encouraging readers to dissect the evidence and how results can be applied to individual patients with different circumstances, varying values and preferences. New to the Second Edition are chapters on health screening, clinical practice guidelines, and major updates incorporating recommended trial criteria.

**About the Authors**

**Antonio L. Dans,** University of the Philippines College of Medicine, Manila, Philippines.

**Leonila F. Dans,** University of the Philippines College of Medicine, Manila, Philippines.

**Maria Asuncion A. Silvestre,** Asia-Pacific Center for Evidence-Based Healthcare, Philippines; and Kalusugan ng Mag-Ina, Inc. (Health of Mother and Child), Quezon City, Philippines.
Pancreatitis: Medical and Surgical Management provides gastroenterologists and GI surgeons, both fully qualified and in training, with a focused, evidence-based approach to the most exciting developments in the diagnosis and clinical management of pancreatitis.

Focusing on the rapidly changing and innovative medical and surgical strategies to manage the disease, the book discusses new surgical procedures such as endoscopic biliary intervention and minimally invasive necrosectomy as well as new medical therapies like Antiprotease, Lexipafant, probiotics and enzyme treatment. Full colour throughout, with over 250 colour illustrations and with reference to the latest clinical guidelines from the AGA, ACG and UEGW at all times, it is an essential consultation tool for all those managing patients with this increasingly common condition.

About the Authors

David B. Adams, Digestive Disease Center at the Medical University of South Carolina.
Peter B. Cotton, Medical University of South Carolina.
Nicholas J. Zyromski, Indiana University.
John Windsor, University of New Zealand, Auckland and Associate Editor of the journals Pancreatology and the World Journal of Surgery.
This unique cardiology primer takes core cardiology information and presents it in an easily digestible format. It provides cardiologists with a thorough and up-to-date review of all aspects of cardiology, from pathophysiology to practical, evidence-based management, and synthesizes pathophysiology fundamentals and evidence-based approaches. Clinical chapters cover coronary artery disease, heart failure, arrhythmias, valvular disorders, pericardial disorders, and peripheral arterial disease. Practical chapters address ECG, coronary angiography, catheterization techniques, echocardiography, hemodynamics, and electrophysiological testing. It includes over 650 figures, key notes boxes, references for further study, and coverage of clinical trials. Review questions at the end of each chapter help clarify topics and can be used for Board preparation - there are over 375 questions in all.

About the Author

**Elias B Hanna MD.** Assistant Professor of Clinical Medicine, Section of Cardiovascular Disease, Louisiana State University School of Medicine, New Orleans, LA, USA.
Designed as a practical, succinct guide, for quick reference by clinicians with everyday questions, this title guides the reader through the range of approaches available for diagnosis, management, or prevention of hemorrhagic and thrombotic diseases or disorders. It provides essential practical management for all those working in the field of hemostasis and thrombosis, and includes new chapters on direct oral anticoagulants, acquired inhibitors of coagulation, and expanded discussion of thrombotic microangiopathies. It covers in a clear and succinct format, the diagnosis, treatment and prevention of thrombotic and haemostatic disorders, and follows templated chapter formats for rapid referral, including key points and summary boxes, and further reading. Controversial issues are highlighted and there is plenty of advice for everyday questions encountered in the clinic.

About the Authors

Nigel S. Key, Harold R. Roberts Distinguished Professor, Division of Hematology and Oncology, University of North Carolina School of Medicine, North Carolina, Chapel Hill, USA.

Michael Makris, Senior Lecturer in Haematology, University of Sheffield, Sheffield, UK.

David Lillicrap, Professor of Hematology, Queen’s University, Kingston, Ontario, Canada.
Roitt’s Essential Immunology is the textbook of choice for students and instructors of immunology worldwide.

This edition begins with a brand new introduction and each chapter in the first section guides the reader through a different part of the immune system. Section 2, Applied Immunology, discusses what happens when things go wrong, and the role the immune system plays alongside the damaging effects of a disease, including cancer, immunodeficiency, allergies and transplantation. The content has been fully updated throughout and includes: an expansion on key clinical topics, including: autoimmune conditions, asthma, and HIV/AIDS; improved artwork and new illustrations; and a range of learning features, including introduction re-cap boxes, end-of-chapter and section summaries to aid revision, as well as further reading suggestions, and a glossary to explain the most important immunology terms. The companion website includes: an additional online-only chapter on immunological methods and applications; further interactive multiple-choice and single-best-answer questions for each chapter; animations and videos showing key concepts; fully downloadable figures and illustrations, further reading and useful links; podcasts to reinforce the key principles explained in the text.

About the Authors

Professor Peter Delves, Department of Immunology, University College London.
Professor Seamus Martin, Smurfit Institute of Genetics, Trinity College Dublin.
Professor Dennis Burton, Department of Immunology and Microbial Science, Scripps Research Institute, California.
Professor Ivan Roitt, Director of the Centre for Investigative and Diagnostic Oncology, University of Middlesex.
Now in its fifth edition, the Textbook of Diabetes has established itself as the modern, well-illustrated, international guide to diabetes. Sensibly organized and easy to navigate, with exceptional illustrations, the Textbook hosts an unrivalled blend of clinical and scientific content. Highly-experienced editors from across the globe assemble an outstanding set of international contributors who provide insight on new developments in diabetes care and information on the latest treatment modalities used around the world.

The fifth edition features an array of brand new chapters, on topics including: ischaemic heart disease; glucagon in islet regulation; microbiome and diabetes; diabetes and non-alcoholic fatty liver disease; diabetes and cancer; end of life care in diabetes, as well as a new section on psychosocial aspects of diabetes.

In addition, all existing chapters are fully revised with the very latest developments, including the most recent guidelines from the ADA, EASD, DUK and NICE.

About the Authors

Professor Richard Holt, University of Southampton, UK.

Professor Clive Cockram, Prince of Wales Hospital, Hong Kong (Peoples Republic of China).
The Heart of Africa
Clinical profile of an evolving burden of heart disease in Africa
Simon Stewart, Karen Sliwa, Ana Mocumbi, Albertino Damasceno & Mpiko Ntsekhe
Mary Mackillop Institute for Health Research, Australian Catholic University, Melbourne, Victoria, Australia; Hatter Institute for Cardiovascular Research in Africa, Department of Medicine, Faculty of Health Sciences, University of Cape Town, South Africa; Soweto Cardiovascular Research Gr; Instituto Nacional de Saude Ministerio da Saude Doencas Cronicas Nao Transmissiveis Instituto Maputo, Mocambique; Departamento de Medicina/Faculdade de Medicina Universidade Eduardo Mondlane Maputo, Moambique; Division of Cardiology Department of Medicine, University of Cape Town, Groote Schuur Hospital Cape Town, South Africa

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While many high-income countries observe a relative decline in the population impact of heart disease and deal with the problem of an older patient population who readily survive earlier non-fatal encounters with the condition, Africa contends with a typically younger population with frequently advanced and often fatal heart disease. While high-income countries exclusively deal with non-communicable forms of heart disease, Africa contends with both communicable and non-communicable forms of heart disease. Designed to provide anyone with an interest in heart disease in Africa with an immediate sense of how the area is progressing from a clinical to research perspective in responding to this evolving epidemic, this book presents salient research including content on maternal heart disease, infant and childhood heart disease, risk and prevention, heart failure and other common forms of heart disease in rural and urban communities in Africa.

About the Authors
Simon Stewart, Australian Catholic University.
Karen Sliwa, University of Cape Town, South Africa.
Ana Mocumbi, University Eduardo Mondlane, Mozambique.
Albertino Damasceno, University Eduardo Mondlane, Mozambique.
Mpiko Ntsekhe, University of Cape Town.
Part of the esteemed IOC Handbook of Sports Medicine and Science series, this new volume on *Training and Coaching the Paralympic Athlete* is athlete-centred with each chapter written for the practical use of medical doctors and allied health personnel. The chapters also consider the role of medical science in the athlete’s sporting career and summarize current international scientific Paralympic literature. It provides a concise, authoritative overview of the science, medicine and psycho-social aspects of training and coaching disabled and Paralympic athletes, and offers guidance on medical aspects unique to the training and coaching of Paralympic athletes. This book is written and edited by global thought leaders in sports medicine and endorsed by both the International Olympic Committee (IOC) and the International Paralympic Committee (IPC).

**About the Authors**

**Professor Yves C. Vanlandewijck Ph.D.,** Department of Rehabilitation Sciences
Katholieke Universiteit Leuven, Leuven, Belgium.

**Professor Walter R. Thompson Ph.D.,** Department of Kinesiology and Health
Georgia State University Atlanta, GA, USA.
Managing urologic cancer by preserving, as opposed to removing, affected tissue is rapidly becoming the favoured choice for urologists and oncologists. Led by Mark Schoenberg, Management of Urologic Cancer: focal therapy and tissue preservation provides a unique overview of this exciting new area in the management of all urologic malignancies. After sections on the biology behind tissue preservation and diagnosis/imaging in uro-oncology, leading experts from North America and Europe focus on the range of focal and tissue-preserving strategies used in the care of patients with urologic cancer: what they are, their benefits compared with traditional methods, practical aspects of tissue preserving treatments, the socio-economic impact of changing surgical paradigms, and potential future directions.

About the Author

Mark Schoenberg, is Bernard L. Schwartz Distinguished Professor of Urologic Oncology and Director of the Division of Urologic Oncology at Johns Hopkins Medical Institution, Baltimore, USA. Mark has had 141 articles published and written or edited 10 books.
Clinical leadership, along with values-based care and compassion, are critical in supporting the development of high quality healthcare service and delivery.

Clinical Leadership in Nursing and Healthcare offers a range of tools and topics that support and foster clinically-focused nurses and other healthcare professionals to develop their leadership potential. The new edition has been updated in light of recent key changes in health service approaches to care and values, and covers a wide spectrum of practical topics including: theories of leadership and management; organisational culture; gender; generational issues and leaders; project management; quality initiatives; working in teams; managing change; effective clinical decision making; how to network and delegate; how to deal with conflict; and implementing evidence-based practice. Each chapter also has a range of reflective questions and self-assessments to help consolidate learning. It is invaluable reading for all nursing and healthcare professionals, as well as students and those newly qualified.

About the Author

David Stanley is Associate Professor in the School of Nursing, Midwifery and Indigenous Health, Charles Sturt University, Australia.
This is an innovative look into mentoring within nursing, and its implications for career success. It provides an up-to-date review of the current research and literature within mentoring in nursing and healthcare, drawing together the distinctive challenges facing nurses and their career development. It proposes new directions and practical ways forward for the future development of formal mentoring programmes in nursing.

Offering fresh insight into mentoring principles and how these can be used beyond pre-registration nurse education to support personal career development, this is an essential book for all those commencing, continuing or returning to a nursing career. It is sector specific but has transferability across disciplines. A summary chapter draws together common threads or theoretical perspectives, and the book concludes with strategies for future research and progress.

About the Authors

**Helen M. Woolnough** is Senior Lecturer in Psychology, Leeds Beckett University, UK.  
**Sandra L. Fielden** is Senior Lecturer in Organisational Psychology, Manchester Business School, University of Manchester, UK.
Rapid Perioperative Care is an essential text for students and practitioners requiring up-to-date fundamental information on the perioperative environment. Covering a wide range of subjects related to perioperative practice and care, each chapter is concise and focused to guide the reader to find information quickly and effectively. This book uses a structured approach to perioperative care, starting with an introduction to the perioperative environment, anaesthetics, surgery and recovery, followed by postoperative problems and finally the roles of the Surgical Care Practitioner (SCP).

Covering all the key topics in the perioperative environment, this concise and easy-to-read title is the perfect quick-reference book for students and theatre practitioners to support them in their work in clinical practice, and enable them to deliver the best possible care.

About the Authors

Paul Wicker is Visiting Professor at the First Hospital of Nanjing, China and Fellow of the Higher Education Academy, UK.

Sara Dalby is Surgical Care Practitioner at Aintree University Hospital Trust, and Associate Lecturer at Edge Hill University, UK.
Acid-Base and Electrolyte Handbook for Veterinary Technicians

David Liss & Angela Randels
Platt College, Los Angeles, California; VCA Veterinary Specialists of the Valley, Woodland Hills, California; Veterinary Training and Consulting, Inc., USA & 1st Pet Veterinary Centers, Arizona, USA

ISBN: 978-1-118-64654-0 | OCT 2016 | 250PP

Acid-Base and Electrolyte Handbook for Veterinary Technicians provides an easy to understand yet comprehensive approach to acid-base and electrolyte balance. The text begins with a thorough introduction to these subjects, followed by detailed chapters on sodium, chloride, potassium, magnesium, phosphorus, calcium, metabolic and respiratory acid-base, blood gas, and mixed acid-base disorders. Included are the traditional along with strong ion approaches to acid-base.

With complete coverage of the principles and procedures, Acid-Base and Electrolyte Handbook for Veterinary Technicians offers both a solid grounding in the fundamentals and more advanced information. A companion website provides case studies and multiple choice questions.

Recently graduated and experienced veterinary technicians alike will find Acid-Base and Electrolyte Handbook for Veterinary Technicians is a useful resource.

About the Authors

Angela Randels-Thorp CVT, VTS (ECC, SAIM) is Team Director for 1st Pet Veterinary Centers, an emergency, specialty and general practice hospital with three locations in Arizona. She is a published author and routinely lectures internationally on both critical care and internal medicine topics, including acid-base and electrolyte imbalances.

David Liss, RVT, VTS (ECC, SAIM) is Program Director of a Veterinary Technology program at Platt College in Los Angeles, California, is an ICU technician at VCA Veterinary Specialists of the Valley in Woodland Hills, CA, and is the owner of a consulting business, Veterinary Training and Consulting, Inc. He routinely lectures nationally on critical care topics, and is a widely regarded educator and teacher.
Atlas of Clinical Imaging and Anatomy of the Equine Head presents a clear and complete view of the complex anatomy of the equine head using cross-sectional imaging: the gross anatomy of a one-centimeter section of the equine head is compared to identical slices in CT and MRI in the transverse, sagittal, and dorsal planes. The atlas includes 326 photographs, radiographs, CT images, and MRI images, with all structures indicated using color-coded labels. Veterinary students, equine practitioners, surgeons and imaging specialists who wish to foster a clear understanding of the anatomy of the structures involved in the equine head will find Atlas of Clinical Imaging and Anatomy of the Equine Head an essential resource.

About the Authors

Larry Kimberlin is the owner of Northeast Texas Veterinary Dental Center in Greenville, Texas, USA.

Alex zur Linden is Assistant Professor of Radiology at Ontario Veterinary College at the University of Guelph in Ontario, Canada.

Lynn Ruoff is Clinical Associate Professor at Texas College of Veterinary Medicine in College Station, Texas, USA.
**Atlas of Tumor Diagnostics in the Dog and Cat**

Anita R. Kiehl & Maron Brown Calderwood Mays

**ISBN:** 978-1-119-05121-3 | AUG 2016 | 288PP

*Atlas for the Diagnosis of Tumors in the Dog and Cat* is a diagnostic tool for determining if samples are abnormal and defining the cause of the abnormality. Providing correlations between cytology and histopathology, the book presents clinical photographs with accompanying photomicrographs showing an aspirate of the lesion and the tissue section, making it easy for the clinician to compare and interpret the aspirate. Brief summaries of the expected behavior for each tumor cover grading protocols, treatments, and possible outcomes, along with additional tests.

With 386 clinical images depicting normal and abnormal results, the book begins by describing specific types of neoplasia and goes on to give a brief overview of the methods used to produce a diagnosis and prognosis from a biopsy tissue sample. The book pairs photographs of biopsy samples with photomicrographs of cells obtained via fine needle aspirate. There’s a very useful chapter covering sample handling, staining, and shipping.

**About the Authors**

**Anita R. Kiehl** is a veterinary pathologist and co-founder of Florida Vet Path, Inc. and FVP Consultants in Bushnell, Florida, USA.

**Maron Brown Calderwood Mays** is a veterinary pathologist and co-owner of Florida Vet Path, Inc. and FVP Consultants.
**Blackwell’s Five-Minute Veterinary Consult Clinical Companion**

**Canine and Feline Behavior, 2nd Edition**
Debra F. Horwitz
Veterinary Behavior Consultations, St. Louis, Missouri, USA

**Series:** Blackwell’s Five-Minute Veterinary Consult  
**ISBN:** 978-1-118-85421-1 | DEC 2016 | 1048PP  
**Previous Edition:** 978-0-781-75735-5

*Blackwell’s Five-Minute Veterinary Consult Clinical Companion: Canine and Feline Behavior, Second Edition* offers fast access to reliable, practical information on managing common behavior disorders in dogs and cats. There is a new organization by section to allow for easier browsing, and 19 new topics or algorithms have been added covering separation anxiety; thunderstorm sensitivity; introducing pets to the family and each other; enrichment; geriatric behavior problems; handling techniques; urine marking; leash reactivity; pediatric behavior problems and best practices; and rescue pets. Includes access to a companion website providing 46 client education handouts for download and use, including 25 brand-new handouts.

**About the Author**

Debra F. Horwitz, DVM, DACVB, owns and operates Veterinary Behavior Consultations in St. Louis, Missouri, USA.
Diseases of the Goat, 4th Edition, is a revised and updated edition of the popular tool for veterinarians featuring of all aspects of goat medicine—from initial assessment and examination to diagnosis, treatment, and control of conditions. This highly practical, concise handbook is designed for frequent reference, and is suitable for all those treating and keeping goats.

- Provides information on predators, euthanasia, post-mortem technique, and fracture repair
- Includes expanded coverage of a number of topics to appeal to a wider and more international audience especially in relation to poisonous plants
- Incorporates the impact of new developments in goat diseases, such as the geographical spread of exotic diseases into new regions

About the Author

John Matthews BSc in Biochemistry, BVMS, MRCVS, is a recently retired partner in a veterinary practice in Chelmsford, UK. He has a particular interest in caprine medicine, having kept goats for over 35 years. He is an Honorary Veterinary Surgeon for the British Goat Society and Past President of the Goat Veterinary Society.
The first book dedicated specifically to this common, serious, and complex equine disease, *Equine Laminitis* is the gold-standard reference to the latest information on every aspect of the disease and its treatment. Discussion includes the history of the diseases, relevant anatomical considerations, pathophysiology, the diagnostic workup, and clinical treatment. There are 50 chapters written by leading international experts, under the editorship of the foremost authority on equine laminitis. This book offers a thorough understanding of this common affliction, grounded in the scientific literature covering everything from effective prevention to treatment plans.

**About the Author**

James Belknap is Professor of Equine Surgery in the Department of Veterinary Clinical Sciences at Ohio State University in Columbus, Ohio, USA. He runs a research laboratory studying the pathophysiology of equine laminitis, and works closely with the Certified Journeyman Farrier, Todd Adams, on podiatry cases including equine laminitis cases.
Now available in a fully updated third edition, *Equine Ophthalmoology* is the most comprehensive and current clinical resource for the diagnosis and treatment of ophthalmic disease in horses. It has been fully updated with improved figures, the latest research, and new chapters on advanced diagnostics, foal ophthalmology, neuro-ophthalmology, national and international regulations, and an expanded chapter on inherited ocular disease. It features contributions from an international group of equine experts, under the editorship of a leading equine veterinary specialist and is ideal for specialists, general equine practitioners, and veterinary students alike. Includes access to a companion website with expanded content and figures.

**About the Author**

**Brian Gilger** is the head of the equine ophthalmology service at North Carolina State University in Raleigh, North Carolina, USA.
Now in its third edition, *Equine Wound Management* has become the authoritative resource for both theoretical and practical information on the care of wounds in horses. Organized by body region and featuring over 750 color photographs this comprehensive reference contains summaries at the beginning of each chapter and highlighted key information helps readers to rapidly find relevant information. A companion website offers videos, interactive multiple choice questions and answers, case studies, and images from the book for download.

**About the Authors**

**Christine L. Theoret** is Professor of Equine Surgical Anatomy and Director of the Comparative Tissue Healing Laboratory at the University of Montreal.

**Jim Schumacher** is Professor of Equine Surgery at the University of Tennessee, College of Veterinary Medicine.
Errors in Veterinary Anesthesia is the first book to offer a candid examination of what can go wrong when anesthetizing veterinary patients, and to discuss how veterinarians can learn from mistakes. Chapters describe common errors, and present practical strategies for avoiding them and for investigating them when they occur. Useful for anyone involved in anesthetizing animals, the book provides invaluable guidance to new and experienced clinicians alike. Actual case examples put the information into context and allow the reader to learn from others’ mistakes. Errors in Veterinary Anesthesia is a helpful resource for veterinary students, especially in their clinical years, veterinary practitioners, and residents and interns in anesthesia.

About the Authors

John W. Ludders, Professor Emeritus at Cornell University in Ithaca, New York, USA. Matthew McMillan, Veterinary School Hospital at the University of Cambridge in Cambridge, United Kingdom.
Now in its third edition, and for the first time in full color *Exotic Animal Medicine for the Veterinary Technician* is a comprehensive yet clear introduction to exotic animal practice for technicians in the classroom and clinic setting alike. With an emphasis on the exotic species most likely to present to a veterinary practice, coverage includes avian, reptiles, amphibians, fish, small mammals, and wildlife.

There is a new chapter on fish medicine and a companion website offering review questions and images from the text in PowerPoint.

**About the Authors**

**Bonnie Ballard** has worked in veterinary medicine since 1974. In 1997, she developed a veterinary technology program at Gwinnett Technical College in Lawrenceville, Georgia, where she acts as the program director. Dr. Ballard also practices small animal medicine as a relief veterinarian.

**Ryan Cheek** is a veterinary technologist and a full-time instructor at Gwinnett Technical College.
Monitoring and Intervention for the Critically Ill Small Animal: The Rule of 20

Rebecca Kirby & Andrew Linklater

Director of Education, Veterinary Institute of Trauma, Milwaukee; Lakeshore Veterinary Specialists, Milwaukee, Wisconsin, USA

ISBN: 978-1-118-90083-3 | DEC 2016 | 504PP

Monitoring and Intervention for the Critically Ill Small Animal: The Rule of 20 offers guidance for assessing the patient, interpreting diagnostic test results, and selecting appropriate monitoring procedures. Based on Rebecca Kirby’s time-tested Rule of 20, with a chapter devoted to each item on the checklist, it is designed for fast access on the clinic floor, with potentially life-saving ideas, tips, lists and procedures, and features tables, schematics, algorithms, and drawings for quick reference.

About the Authors

Rebecca Kirby was formerly an Associate Professor and Director of Emergency Services at the University of Pennsylvania, and served as owner of the Animal Emergency Center in Milwaukee, Wisconsin, USA for 21 years.

Andrew Linklater trained at the Animal Emergency Center and is currently a Clinical Instructor at Lakeshore Veterinary Specialists in Milwaukee, Wisconsin, USA.
Two-Dimensional and M-Mode Echocardiography for the Small Animal Practitioner

June A. Boon

Series: Rapid Reference

Two-Dimensional and M-Mode Echocardiography for the Small Animal Practitioner is a concise, accessible manual of basic two-dimensional and m-mode echocardiography. It offers fast access to practical advice on obtaining and evaluating echocardiograms and easy reference to the common features of the most commonly acquired cardiac diseases. The book is designed for ease of use, with concise, bulleted text and 165 images, and includes access to a website with video clips showing techniques and disease features. It features updated generic and normalized reference ranges with a bibliography of breed-specific reference articles.

About the Author

June A. Boon is an Instructor and Echocardiographer at the College of Veterinary Medicine and Biomedical Sciences at Colorado State University.
Veterinary Embryology, 2nd Edition, has been updated to reflect the many changes that have developed in the field. The text has been fully revised and expanded, with four new chapters, and is now in full colour with many new pedagogical features and a companion website. Written by a team of authors with extensive experience of teaching this subject, the short concise chapters on key topics describe complex concepts in a user-friendly way, and additional tables, flow diagrams and numerous hand-drawn illustrations support the concepts presented in the text.

About the Authors

**Thomas McGeady, PJ Quinn** and **Eamonn Fitzpatrick**: formerly University College Dublin.

**Marion Ryan, David Kilroy, Patrick Lonergan**, University College Dublin.
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Concerns about the exploitation of limited resources, optimum development trajectories, and climate change draw attention to the temporal horizons of our environment. *Environmental Futures* is a curated collection of essays that explores different ways of knowing the future and how these futures shape contemporary social worlds. These include a range of detailed case studies, from ice melting in Antarctica to coal mining in Bangladesh, flooding in Colombia to climate modelling in Egypt. It approaches prognosis as a cultural, political, and material process and reveals the ways in which authority and expertise may be reinforced, circumscribed, or contested in the process of making a prediction and its aftermath. The book offers novel insights on how and why futures come to be significant in the present.

**About the Author**

Jessica Barnes is an Assistant Professor in the Department of Geography and Environment. Dr Barnes’ publications include *Cultivating the Nile* (2014), *Climate Cultures* (2015), and articles in a number of peer-reviewed journals, including *Critique of Anthropology*, *Social Studies of Science*, and *GeoForum*. 
Revised and updated, this second edition of *Living Language: An Introduction to Linguistic Anthropology* is a highly accessible introduction to the study of language in real-life social contexts around the world through the contemporary theory and practice of linguistic anthropology.

It combines classic studies on language and cutting-edge contemporary scholarship, and assumes no prior knowledge in linguistics or anthropology. Featuring a series of updates and revisions for this new edition, including an all-new chapter on forms of non-verbal language, this is a unifying synthesis of current research which also considers future directions for the field.

**About the Author**

Laura M. Ahearn is an AAAS Science and Technology Policy Fellow serving as a Senior Learning Advisor in the U.S. Agency for International Developments Center of Excellence on Democracy, Human Rights, and Governance. She is the author of *Invitations to Love: Literacy, Love Letters, and Social Change in Nepal* (2001) and the Series Editor of *Oxford Studies in the Anthropology of Language*.
The Sociology of Healthcare Safety and Quality presents a series of research-informed readings on the sociological contributions of technologies, practices, experiences, and organizational quality and safety across a range of healthcare contexts. This is the first collection of peer-reviewed research articles showcasing ways that sociology can contribute to the ongoing policy concern of healthcare safety and quality, and features original contributions from leading experts in healthcare related fields from three continents. Revealing the state-of-the art in sociological analyses of contemporary healthcare safety and quality along with future directions in the field, this book offers sociological insights from the perspectives of managers, clinicians, and patients.

About the Authors

Davina Allen is a Professor of Health Care Delivery and Organization at Cardiff University, UK, a member of the Sociology of Health s Health and co-leads Kings Improvement Science at Kings College, London.

Justin Waring is Professor of Organisational Sociology and Director of the Centre for Health Innovation, Leadership.
Providing an authoritative overview of criminological research on the causes of and responses to terrorism, *The Wiley Handbook to the Criminology of Terrorism* offers an up-to-date reference for one of the major growth areas in social science scholarship over the past two decades.

- An authoritative resource for research that applies criminological frameworks and methods to the study of the causes of terrorism and responses to it
- Addresses major themes and controversies across seven broad areas, including etiology, theories, methods, types of terrorism, terrorism and other forms of crime, terrorism and the criminal justice system, and countering terrorism
- Focuses on criminological conceptual frameworks and empirical studies that engage terrorism and responses to it
- Includes contributions from internationally regarded experts in the field

**About the Authors**

**Gary LaFree** is Director of the National Center for the Study of Terrorism and Responses to Terrorism (START) at the University of Maryland, as well as professor in the Department of Criminology and Criminal Justice. He is co-author of *Putting Terrorism in Context: Lessons Learned from Global Data* (forthcoming 2014, with Laura Miller and Erin Dugan), co-editor of *Democracy, Crime, and Justice* (2006, *The ANNALS of the American Academy of Political and Social Science Series*, with Susanne Karstedt), and author of *Losing Legitimacy: Street Crime And The Decline Of Social Institutions In America* (1999). In addition, he has written over 70 articles and book chapters and is currently on the editorial boards of eight journals.

**Joshua D. Freilich** is a member of the Criminal Justice Department, and the Criminal Justice PhD Program at John Jay College, CUNY. He is the Creator and co-Director of the United States Extremist Crime Database (ECDB) study. He is the author or editor of several books, including *Transnational Terrorism* (2013, written with Steven Chermak), and *Policing & Preventing Terrorism around the Globe* (2013, edited with Shlomo Shoham). His has been published in leading journals in the fields of criminology and criminal justice, psychology and the law, and terrorism studies.
In 12 essays by a distinguished group of art historians, *Art and Technology in Early Modern Europe* explores the relationship between artistic and technological advances from the Renaissance to the Industrial Revolution. It provides a broad definition of technology for this period and addresses the influence of technological shifts on the history of early modern art. It covers c.1420-1820, the time period between the advent of the printed image and that of the photographically produced image, and discusses a wide range of early modern artists tools, instruments, skills, and techniques and their historical applications. This book highlights a frequently overlooked aspect of research within art history that yields substantial insights into the analysis of the making and viewing of art.

**About the Authors**

**Richard Taws** is Reader in the History of Art Department at University College London, UK. He is the recipient of fellowships from the Getty, the Institute for Advanced Study, Princeton, and the Bard Graduate Center, New York, and was recently awarded a Philip Leverhulme Prize.

**Genevieve Warwick** is Editor of *Art History* and a widely-published author.
Instead of focusing on student preparedness for college (or lack thereof), this book asks the more pragmatic question of what are colleges and universities doing to prepare for the students who are entering their institutions? What must change in an institution’s policies, practices, and culture in order to be student-ready? Clear and concise, this book is packed with insightful discussion and practical strategies for achieving ambitious student success goals. These ideas for redesigning practices and policies provide more than food for thought, they offer a real-world framework for real institutional change.

It teaches: how educators can acknowledge their own biases and assumptions about underserved students in order to allow for change; new ways to advance student learning and success; how to develop and value student assets and social capital; strategies and approaches for creating a new student-focused culture of leadership at every level.

About the Authors

Tia McNair is senior director for student success at the American Association of Colleges and Universities (AAC&U).

Susan Albertine is vice president for diversity, equity, and student success at AAC&U.

Michelle Asha Cooper is president of the Institute for Higher Education Policy.

Nicole McDonald is a strategy officer at Lumina Foundation.

Thomas Major, Jr. is general counsel and strategy officer at the Lumina Foundation.
An organizational approach to more effective school leadership, online and off

Leadership, especially in a school setting, is too important to be merely intuitive, and as the online aspects of schools become just as important as their brick-and-mortar counterparts, leaders must be as effective screen-to-screen as they are face-to-face. In this book, Steve and Reshan outline a new way of thinking for a new kind of leader, presenting a unique approach to utilizing technology for more effective learning. Effective blended leaders see technology such as email, websites, apps, updates, tweets, attachments, infographics, and YouTube, not as distractions, but as spurs to action, models, test cases, remixable commodities, and learning opportunities. Drawing from research, experience, and real-world examples, this book explores and unpacks six core beliefs necessary for the blended leader to succeed. *Blending Leadership* gives any school leader the perspective they need to excel and the knowledge to leverage the tools at their disposal.

About the Authors

**Stephen Valentine** is Assistant Head at Montclair Kimberly Academy (MKA) in New Jersey. He has published articles in *Independent School* and *Independent Teacher* magazines and the book *Everything but Teaching*.

**Dr. Reshan Richards** is an adjunct instructor at Teacher’s College, Columbia, founder of an educational technology company, and director of educational technology at MKA. He developed the app Explain Everything, which has over 1,400,000 paid downloads worldwide and has become the #1 Educational app in the United States, Australia, Finland, Canada, and the United Kingdom. He is the author of the *Multi-Touch Explain Everything 2.0 User Manual* (over 18k downloads), and has written for *Education Week* and the *Get Smart* blog.
This book discusses the insights, challenges, issues, expectations, and practical implementation of data mining (DM) within educational mandates. The initial series of chapters offers a general overview of DM, Learning Analytics (LA), and data collection models in the context of educational research, while also defining and discussing data mining’s four guiding principles: prediction, clustering, rule association, and outlier detection. The next series of chapters showcases the pedagogical applications of Educational Data Mining (EDM) and features case studies drawn from Business, Humanities, Health Sciences, Linguistics, and Physical Sciences education that serve to highlight the successes and some of the limitations of data mining research applications in educational settings. The remaining chapters focus exclusively on EDM’s emerging role in helping to advance educational research, from identifying at-risk students and closing socioeconomic gaps in achievement to aiding in teacher evaluation and facilitating peer conferencing. This book features contributions from international experts in a variety of fields.

**About the Authors**

**Samira ElAtia** is Associate Professor of Education at The University of Alberta, Canada.

**Donald Ipperciel** is Principal and Professor at Glendon College, York University, Toronto, Canada and was the Canadian Research Chair in Political Philosophy and Canadian Studies between 2002 and 2012.

**Osmar R. Zaïane** is Professor of Computing Science at the University of Alberta, Canada.
The companion Study Guides to Eureka Math gather the key components of the curriculum for each grade into a single location, unpacking the standards in detail so that both users and non-users of Eureka Math can benefit equally from the content presented. The Study Guides can serve as either a self-study professional development resource or as the basis for a deep group study of the standards for a particular grade. For teachers who are new to the classroom or the standards, the Study Guides introduce them not only to Eureka Math but also to the content of the grade level in a way they will find manageable and useful. Teachers familiar with the Eureka Math curriculum will also find this resource valuable as it allows for a meaningful study of the grade level content in a way that highlights the coherence between modules and topics. The Study Guides allow teachers to obtain a firm grasp on what it is that students should master during the year.

About the Author

Great Minds (greatminds.net) is a non-profit organization formed in 2007 to advocate for a content-rich liberal arts education in Americas K-12 schools. To improve education in America, Common Core creates curriculum materials, conducts professional development, and also promotes programs, policies, and initiatives that provide students with challenging, rigorous instruction in the full range of liberal arts, math, and sciences.
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The teaching workforce is experiencing an overall “greening” — that is, more teachers have fewer years of experience than in any recent decade. For example in the US in 1988, the average teacher had fifteen years of teaching experience; by 2008, a quarter of all teachers had been teaching for under five years. In a workforce this thick with inexperience, leaving the development of rookie teachers to chance puts a greater-than-ever proportion of students at an unfair and unacceptable disadvantage. This book makes clear the skills rookie teachers must learn to ensure that their students’ learning never has to wait, separating what they’ll need to know someday from what they need to know right now. Filled to the brim with the coaching techniques to get them there, the book contains every tool an educator of teachers needs to guide their cohort of teachers to success, starting today.

About the Author

Paul Bambrick-Santoyo is the Chief Schools Officer for High Schools and K-12 Content Development. Author of Driven by Data, Leverage Leadership, and Great Habits, Great Readers, Bambrick-Santoyo has trained over 15,000 school leaders worldwide in instructional leadership, including multiple schools that have gone on to become the highest-gaining or highest achieving schools in their districts, states and/or countries.
How to Reach and Teach Children and Teens with ADD/ADHD

3rd Edition
Sandra F. Rief
San Diego, California

Previous Edition: 978-0-787-97295-0
Previous Editions Licensed in: Hebrew, Korean, Spanish
Authors’ Previous Titles Licensed in: French, Hebrew, Japanese, Portuguese, Simplified Chinese, Spanish

The most up-to-date and comprehensive vital resource for educators seeking ADD/ADHD-supportive methods

How to Reach and Teach Children and Teens with ADD/ADHD, Third Edition is an essential guide for school personnel. Approximately 10 percent of school-aged children have ADD/ADHD—that is at least two students in every classroom. Without support and appropriate intervention, many of these students will suffer academically and socially, leaving them at risk for a variety of negative outcomes. This book serves as a comprehensive guide to understand and manage ADHD: utilizing educational methods, techniques, and accommodations to help children and teens sidestep their weaknesses and showcase their numerous strengths. This new 2016 edition has been completely updated with the latest information about ADHD, research-validated treatments, educational laws, executive function, and subject-specific strategies. It also includes powerful case studies, intervention plans, valuable resources, and a variety of management tools to improve the academic and behavioral performance of students from kindergarten through high-school. From learning and behavioral techniques to whole group and individualized interventions, this indispensable guide is a must-have resource for every classroom—providing expert tips and strategies on reaching kids with ADHD, getting through, and bringing out their best.

• Prevent behavioral problems in the classroom and other school settings
• Increase students’ on-task behavior, work production, and academic performance
• Effectively manage challenging behaviors related to ADHD
• Improve executive function-related skills (organization, memory, time management)
• Apply specific research-based supports and interventions to enable school success
• Communicate and collaborate effectively with parents, physicians, and agencies

About the Author
Sandra F. Rief is an award-winning educator with 25+ years of experience teaching in public schools, is a nationally and internationally recognized speaker, consultant, and teacher-trainer. She specializes in instructional and behavioral strategies for meeting the needs of children with learning, attention, and behavioral challenges.

To request review copies translationrights@wiley.com
Leadership for a Better World
Understanding the Social Change Model of Leadership Development, 2nd Edition
Susan R. Komives, Wendy Wagner & NCLP
University of Maryland, College Park; George Mason University; National Clearinghouse for Leadership Programs

The essential guide to the theory and application of the Social Change Model (SCM) which is the most widely-used leadership model for college students, and has shaped college leadership curricula at schools throughout the U.S. and other countries.

Leadership for a Better World gives students a real-world context through which to explore SCM through the seven C’s of leadership for social change as well as approaches to socially responsible leadership. Action items, reflection, and discussion questions throughout encourage students to think about how these concepts apply in their own lives, and the Facilitator’s Guide includes a wealth of activities, assignments, discussions, and supplementary resources to enrich the learning experience whether in class or in the co-curriculum. This new second edition includes student self-assessment rubrics for each element of the model and new discussion on the critical roles of leadership self-efficacy, social perspective, and social justice perspectives. Content is enriched with research on how this approach to leadership is developed, and two new chapters situate the model in a broader understanding of leadership and in applications of the model.

About the Authors
Susan R. Komives is professor emerita from the University of Maryland and consulting editor for student leadership for Jossey-Bass. She is co-founder of the National Clearinghouse for Leadership Programs (NCLP). She is founding editor of the journal New Directions for Student Leadership.

Wendy Wagner is the former coordinator of the NCLP and former director of the University of Maryland America Reads America Counts program.
Leading for Literacy provides tools and real-life examples to expand the benefits of a literacy approach that sparks students’ engaged reading and thinking across disciplines, from middle school through community college. A companion to the landmark Reading for Understanding (9780470608319), this book guides teachers, leaders, and administrators through the nuts, bolts, benefits, and stumbling blocks of creating Reading Apprenticeship communities that extend a culture of literacy beyond individual classrooms. It explains how to generate authentic buy-in from teachers and administrators, use the Reading Apprenticeship Framework to turn reform overload into reform coherence, and create literacy teams, professional learning communities, and Reading Apprenticeship communities of practice that sustain an institutional focus on a student-centered, strengths-based culture of literacy.

About the Authors

Ruth Schoenbach and Cynthia Greenleaf, are co-directors of WestEd’s Strategic Literacy Initiative (SLI), a teacher professional development/research organization based in Oakland, CA, and the developers of the Reading Apprenticeship Framework, a widely acclaimed approach to content area reading instruction.

Lynn Murphy is the Director of Materials Development for SLI. The companion volume to this book, Reading for Understanding, has sold over 130,000 copies in two editions.
The Agency by Design guide to implementing maker-centered teaching and learning.

Maker-Centered Learning provides both a theoretical framework and practical resources for the educators, curriculum developers, librarians, administrators, and parents navigating this burgeoning field. Written by the expert team from the Agency by Design initiative at Harvard’s Project Zero, this book identifies a set of educational practices and ideas that define maker-centered learning, and introduces the focal concepts of maker empowerment and sensitivity to design. A surge of voices from government, industry, and education have argued that, in order to equip the next generation for life and work in the decades ahead, it is vital to support maker-centered learning in various educational environments. Maker-Centered Learning provides insight into what that means, and offers tools and knowledge that can be applied anywhere that learning takes place.

About the Authors

The goal of the Agency by Design (AbD) research initiative at the Harvard Graduate School of Education is to explore the promises, practices, and pedagogies of maker-centered learning. The authors are the AbD research team: Edward P. Clapp, Lecturer on Education at HGSE; Jessica Ross, teaching fellow at HGSE; Jennifer Ryan, co-developer of an online course for Harvard; Shari Tishman, Lecturer at Harvard Graduate School of Education.
A seminal handbook in the field for more than 20 years, this new and updated edition of *Mathematics for Dyslexics and Dyscalculics* contains the latest research and best practices for helping learners with numerical and mathematical difficulties.

- Provides a complete overview of theory and research in the fields of dyslexia and dyscalculia, along with detailed yet pragmatic methods to apply in the classroom.
- Contains enhanced coverage of place value and the role of the decimal point, why fractions can challenge a developed logic for arithmetic, and the complexity of time along with new material on addressing anxiety, fear, motivation, and resilience in the classroom; and links to new resources including standardized tests and recommended reading lists.
- Written by two mathematics teachers with 50 years of teaching experience between them, much of it in specialist settings for students with specific learning difficulties.
- Offers effective teaching strategies for learners of all ages in a structured but accessible format.

**About the Authors**

**Steve Chinn** is an independent lecturer, writer, and researcher, and Visiting Professor at the University of Derby, UK. He spent twenty-four years as head teacher of three specialist schools and was a mainstream teacher for fourteen years. He has received the Marion Welchman International Award for Services to Dyslexia, and the Lady Radnor Award for Lifetime Services to Dyslexia. He has lectured and taught in over 30 countries worldwide and has spoken at many major conferences. He is the author of numerous books.

**Richard Ashcroft** was Headmaster at Mark College, UK, a specialist residential school for young people with specific learning difficulties.
Practical Leadership in Community Colleges offers a path forward through the challenges community colleges face every day. Through field observations, reports, news coverage, and interviews with leaders and policy makers, this book digs deep into the issues confronting college leaders and provides clear direction for managing through the storm. With close examination of both emerging trends and perennial problems, the discussion delves into issues brought about by changing demographics, federal and state mandates, public demand, economic cycles, student unrest, employee groups, trustees, college supporters, and more to provide practical guidance toward optimal outcomes for all stakeholders. Both authors serve as consultants, executive coaches, and advisors to top leaders, higher education institutions, and leadership development programs throughout the United States.

This book provides real-world guidance for current and emerging leaders and trustees seeking more effective management methods, with practical insight and expert perspective.

About the Authors

George R. Boggs is Superintendent and President Emeritus of Palomar College in San Marcos, California.

Christine J. McPhail is the Managing Principal for the McPhail Group LLC, a higher education consulting firm, former President of Cypress College, Emerita Professor of Higher Education and Founder of the Community College Leadership Doctoral Program at Morgan State University, and a coach for Achieving the Dream, a national nonprofit dedicated to community college student success and completion.
Shaping School Culture
Pitfalls, Paradoxes, and Promises, 3rd Edition
Terrence E. Deal & Kent D. Peterson
University of Southern California; University of Wisconsin-Madison and Vanderbilt Principals Institute

Previous Edition: 978-0-7879-9679-6
Previous Editions Licensed in: Japanese, Korean, Simplified Chinese
Authors’ Previous Titles Licensed in: French, Norwegian, Orthodox Chinese, Portuguese, Russian, Spanish, Swedish, Turkish

The most trusted guide to school culture, updated with current challenges and new solutions

*Shaping School Culture* is the classic guide to exceptional school leadership, featuring concrete guidance on influencing the subtle symbolic features of schools that provide meaning, belief, and faith. Written by renowned experts in the area of school culture, this book tackles the increasing challenges facing public schools and provides clear, candid suggestions for more effective symbolic leadership. This new third edition has been revised to reflect the reality of schools today, including the increased emphasis on high-stakes testing, federal reforms such as No Child Left Behind (NCLB) and Every Student Can Succeed (ESCS), state-sponsored improvement programs, and other major issues that impact organizational culture and the role of school leaders. Each chapter features new examples and cases that illustrate persistent problems, spelling out key cultural implications and offering concrete examples of overcoming the challenges while maintaining a meaningful learning environment. The chapter on toxic schools continues to provide the field’s most trusted advice on navigating this rocky terrain, and the discussion’s focus on how to manage negativity remains especially integral to besieged school administrators across the U.S.

About the Authors

**Terrence E. Deal** is the author or co-author of more than 30 books on leadership, including *Reframing Organizations*, *Leading with Soul*, and *The Leadership Paradox*. A widely known expert on organizational culture, he consults to educational, business, healthcare, and religious organizations nationally and internationally.

**Kent D. Peterson** is a professor at University of Wisconsin. Peterson consults and trains on school leadership and organizational change around the world.
The bestselling student affairs text, updated for today’s evolving campus.

The student affairs staff has the responsibility for a vast array of services and support roles for students on every type of campus. This book provides a thorough overview of the field’s many facets, with invaluable real-world insight from leading practitioners. This new sixth edition has been updated throughout to align with current scholarship, and expanded with four new chapters on student development, crisis management, programming, and applications. Twenty new authors join the roster of expert contributors, bringing new perspective on critical issues such as ethical standards, campus culture, psychosocial development, student retention, assessment and evaluation, and much more. End-of-chapter questions help reinforce the material presented, and unique coverage of critical theoretical perspectives, counseling and helping skills, advising, leadership, environmental theories, and other useful topics make this book a foundational resource for those preparing for a student affairs career.

About the Authors

John H. Schuh, Iowa State University is the author, co-author, or editor of over 275 publications.

Susan R. Jones, Ohio State University is author, co-author, or editor of over 45 publications.

Vasti Torres is dean and professor of the College of Education at the University of South Florida and author of four books.
The must-have companion workbook to the bestselling *Teach Like a Champion 2.0*

Just like *Teach Like a Champion Field Guide* helped educators put the original 49 techniques into practice, *Field Guide 2.0* is the ultimate resource for the 62 techniques in *Teach Like a Champion 2.0*. They’re the most rigorous, champion-vetted techniques yet and this book takes you through them from top to bottom with the kind of clarity and breadth you’ve come to expect from the experts at *Teach Like a Champion*. The book includes:

- Practical approaches to each of the 62 techniques
- 75+ video clips with analysis of the techniques in play in the classroom
- Hands-on activities to bring the 62 techniques from the page into the classroom

*Teach Like a Champion 2.0* is a book by educators for educators. It’s about giving teachers what they need to share their strengths so that every teacher, from first year rookie to third-year veteran, can approach their classes with the skills they need for their students to succeed. *Teach Like a Champion Field Guide 2.0* is the indispensable guide to getting there, one technique at a time.

**About the Authors**

**Doug Lemov** is a managing director of Uncommon Schools and leads its Teach Like a Champion team, designing and implementing teacher training based on the study of high-performing teachers.

**Jennifer Kim** and **Joaquin Hernandez** are both associate directors of professional development at Uncommon Schools.
This state-of-the-art resource brings together the most innovative scholars and thinkers in the field of testing to capture the changing conceptual, methodological, and applied landscape of cognitively-grounded educational assessments.

- Offers a methodologically-rigorous review of cognitive and learning sciences models for testing purposes, as well as the latest statistical and technological know-how for designing, scoring, and interpreting results
- Written by an international team of contributors at the cutting-edge of cognitive psychology and educational measurement under the editorship of a research director at the Educational Testing Service and an esteemed professor of educational psychology at the University of Alberta as well as supported by an expert advisory board
- Covers conceptual frameworks, modern methodologies, and applied topics, in a style and at a level of technical detail that will appeal to a wide range of readers from both applied and scientific backgrounds
- Considers emerging topics in cognitively-grounded assessment, including applications of emerging socio-cognitive models, cognitive models for human and automated scoring, and various innovative virtual performance assessments

About the Authors

Andre A. Rupp is Research Director at Educational Testing Service (ETS) in Princeton, NJ, where he works with teams that conduct comprehensive evaluation work for mature and emerging automated scoring systems. He is co-author of Diagnostic Measurement: Theory, Methods, and Applications (2010).

Jacqueline P. Leighton is Professor and Chair of Educational Psychology at the University of Alberta, Canada. She is past Director of the University of Alberta’s Centre for Research in Applied Measurement and Evaluation (CRAME). She has published in a variety of educational measurement journals and is past editor of Educational Measurement: Issues and Practice. She is co-author of The Learning Sciences in Educational Assessment (2011) and Cognitive Diagnostic Assessment for Education: Theory and Applications (2007) and co-editor of The Nature of Reasoning (2004).
The explosion of online learning has created a demand for great online teachers. Increasingly, faculty who normally teach face-to-face are being asked to cover online courses, yet comprehensive pedagogical resources are scarce. The theory and techniques of successful online teaching can be significantly different from those used face-to-face. The learning curve is huge, and faculty need a practical approach to course design and management that can be quickly and easily implemented. The Online Teaching Survival Guide provides that essential resource, with a customizable framework and deeper exploration of effective online teaching. Updated to cover new and emerging issues and technologies, it reviews the latest research in cognitive processing and related learning outcomes while retaining a focus on the practical. The tips cover course management, social presence, community building, integration of new technologies, discussion and questioning techniques, assessment, and debriefing, along with new coverage of intensive or accelerated courses, customizing learning strategies, developing expertise, advanced course design, and assessment techniques.

About the Authors
Judith V. Boettcher is a consultant and author on online distance learning. Rita-Marie Conrad, University of California, Berkeley, is an online educator, award-winning author, and digital learning strategist. Judith and Rita-Marie are co-authors of Faculty Guide for Moving Teaching and Learning to the Web (1999, 2004) and the first edition of The Online Teaching Survival Guide (Jossey-Bass, 2010).
Enterprising Nature explores the rise of economic rationality in global biodiversity law, policy and science. It examines disciplinary apparatuses, ecological-economic methodologies, computer models, business alliances, and regulatory conditions creating the conditions in which nature can be produced as enterprising. The author relates lively, first hand accounts of global processes at work drawn from multi-site research in Kenya, England, and Japan and assesses the scientific, technical, geopolitical, economic, and ethical challenges found in attempts to enterprise nature, investigating the implications for environmental politics and policy of this will to enterprise.

About the Author

Jessica Dempsey is an Assistant Professor at the Department of Geography at the University of British Columbia, Canada.
Pathological Lives

Disease, Space and Biopolitics

Steve Hinchliffe, Nick Bingham, John Allen & Simon Carter
Open University

Series: RGS-IBG Book Series

Pandemics, epidemics and food-borne diseases are a major global challenge. Focusing on the food and farming sector, and mobilising social theory as well as empirical enquiry, Pathological Lives investigates current approaches to biosecurity and asks how pathological lives can be successfully regulated without making life more dangerous as a result. It focuses on the food and farming sector, where the generation and subsequent transmission of disease has the ability to reach pandemic proportions, and demonstrates the importance of a geographical and spatial analysis, drawing together social, material and biological approaches, as well as national and international examples. The book makes three main conceptual contributions, reconceptualising disease as situated matters, the spatial or topological analysis of situations and a reformulation of biopolitics. Uniquely it brings together conceptual development with empirically and politically informed work on infectious and zoonotic disease, to produce a timely and important contribution to both social science and to policy debate.

About the Authors

Steve Hinchliffe is Professor of Human Geography at Exeter University, UK.
Nick Bingham is a Senior Lecturer in the Faculty of Social Sciences, The Open University, UK.
John Allen is Professor of Economic Geography in the Faculty of Social Sciences, The Open University, UK.
Simon Carter is a Senior Lecturer in the Faculty of Social Sciences, The Open University, UK.
Rehearsing the State
The Political Practices of the Tibetan Government-in-Exile
Fiona McConnell
University of Oxford, UK

Series: RGS-IBG Book Series

*Rehearsing the State* presents a comprehensive investigation of the institutions, performances, and actors through which the Tibetan Government-in-Exile is rehearsing statecraft. McConnell offers new insights into how communities officially excluded from formal state politics enact hoped-for futures and seek legitimacy in the present. The book offers timely and original insights into exile Tibetan politics based on detailed qualitative research in Tibetan communities in India, and advances existing debates in political geography by bringing ideas of stateness and statecraft into dialogue with geographies of temporality. It explores the provisional and pedagogical dimensions of state practices, adding weight to assertions that states are in a continual situation of emergence. A significant contribution to critical state theory.

**About the Author**

**Fiona McConnell** is Associate Professor in Human Geography at the University of Oxford. She is co-editor of *Geographies of Peace* (2014) and *Diplomatic Cultures and International Politics* (forthcoming), and sits on the Board of Directors of the Tibet Justice Centre.
Smoking Geographies provides a research-led assessment of the impact of geographical factors on smoking. The book records the outcomes of a long-term research collaboration to uncover how geography can show us not only why people smoke but also broader issues of tobacco control, providing deeper clarity on how smoking and tobacco is governed. This is one of the most important public health issues worldwide, and a major determinant of preventable mortality and morbidity in developed and developing countries. This book brings both quantitative and qualitative perspectives to bear on this major source of mortality and morbidity.

About the Authors

Ross Barnett, Adjunct Professor, University of Canterbury, Christchurch, New Zealand.

Graham Moon, Professor of Spatial Analysis in Human Geography, University of Southampton, England.

Jamie Pearce, Professor of Health Geography at the University of Edinburgh, Scotland.

Lee Thompson, Senior Lecturer at the University of Otago, Christchurch, New Zealand.

Liz Twigg, Reader in Human Geography, University of Portsmouth, England.
A cross-cultural scientific examination of common complementary, alternative, and integrative health practices, this book provides a critical analysis of non-allopathic healing practices, including their uses, limitations, and scientific bases. The evidence-based discussion explores complementary, alternative, and integrative health (CAIH) across various cultural and ethnic groups internationally, to give the reader a greater understanding of the different modalities including a literature-backed examination of proven methods and questionable practices within a cross-cultural framework. Each chapter highlights the scientific analysis of the practices relevant to each group, and guides the reader towards independent analysis of the risks and benefits of the practices discussed. Emphasizing the student as a future health professional, this book includes case studies, examples, questions, and discussion problems that underscore the role of health educators in educating consumers about CAIH practices. This book provides a solid background in CAIH for the health professional, through rigorous scientific investigation and a multicultural perspective and helps medical professionals understand the risks, benefits, and evidence behind these practices so they can provide the best in patient care.

About the Authors

Helda Pinzon-Perez is a Professor in the Department of Public Health, California State University.

Miguel A. Perez is Professor and Chair, Department of Public Health, California State University.
Presenting an overview of best practices from schools, healthcare organizations, workplaces, and communities, this book offers clear, practical guidance with an emphasis on hands-on learning. This new second edition has been updated to include discussion on today’s important issues, including health equity, the Affordable Care Act, big data, E-health, funding, legislation, financing, and more. New coverage includes programs for underserved priority populations at a geographically-diverse variety of sites, and new practice and discussion questions promote engagement on highly-relevant topics. Public health is a critical aspect of any society, and health promotion programs play an important role. This book provides clear instruction, practical guidance, and multiple avenues to deeper investigation. Designed to promote engagement and emphasize action, this book is the essential introductory text for practical, real-world understanding.

About the Authors

Carl I. Fertman is associate professor in Health and Physical Activity and executive director of the Maximizing Adolescent Potentials (MAPS) Program, University of Pittsburgh.

Diane D. Allensworth is professor emeritus, Kent State University.

Society for Public Health Education (SOPHE) is the leading international professional association for health education professionals, faculty, and students.
Part research manual, part study guide, and part introduction to the study of history, *Essaying the Past* guides the reader through the nuts and bolts of producing good historical prose, offering key strategies and useful tips. It includes expert advice on writing about history, conducting good research, and learning how to think analytically, and covers important topics such as framing questions, developing a strong introduction and topic sentences, choosing good evidence, and the crucial role of revision. An annotated case study takes the reader through one student’s process of writing an essay and illustrates how strategies discussed in the book can be successfully implemented. Six appendices cover the major issues facing students today, such as the dangers of plagiarism and the role of the internet.

**About the Author**

**Losing Eden**

An Environmental History of the American West
Sara Dant

**Series:** Western History Series  
**ISBN:** 978-1-118-93428-9 | AUG 2016 | 224PP

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*Losing Eden* traces the environmental history and development of the American West and explains how the land has shaped, and been shaped by, the people who live there. It discusses key events and topics from the Beringia migration, Columbian Exchange, and federal territorial acquisition, to post-war expansion, resource exploitation, and climate change. The coverage is structured around three important themes: balancing economic success and ecological destruction; avoiding “the tragedy of the commons”; and achieving sustainability. This accessible and up-to-date narrative is written by an expert scholar and professor and supplements a variety of college-level survey or seminar courses on US, American West, or environmental history. The book incorporates student-friendly features, including definitions of key terms, suggested reading sections, and over 30 illustrations.

**About the Author**

**Sara Dant** is Professor of History at Weber State University, USA. Her work focuses on environmental politics in the United States with a particular emphasis on the creation and development of consensus and bipartisanship. She is the author of several prize-winning articles on western environmental politics and co-author of the two-volume *Encyclopedia of American National Parks* (2004).
Categorical Statistics for Communication Research presents scholars with a discipline-specific guide to categorical data analysis. The text blends necessary background information and formulas for statistical procedures with data analyses illustrating techniques such as log-linear modeling and logistic regression analysis. It provides techniques for analyzing categorical data from a communication studies perspective and provides an accessible presentation of techniques for analyzing categorical data for communication scholars and other social scientists working at the advanced undergraduate and graduate teaching levels. Illustrated with examples from different types of communication research such as health, political and sports communication and entertainment, the text includes exercises at the end of each chapter and a companion website containing exercise answers and chapter-by-chapter PowerPoint slides.

About the Author

Bryan E. Denham is Professor of Communication at Clemson University. An expert on logistic regression and log-linear modeling, he has published articles on teaching empirical research methods and applying categorical statistics to social data in outlets such as the *Journal of Communication*, *Journalism & Mass Communication Quarterly*, *Journalism & Mass Communication Educator*, and the *Journal of Risk Research*. 
Introduction to Information Literacy for Students is a concise, practical guide to navigating information in the digital age. Featuring a unique step-by-step method that can be applied to any research project, the book includes research insights from professionals, along with review exercises, insiders’ tips and tools, search screen images utilized by students, and more. It encourages active inquiry-based learning through the inclusion of various study questions and exercises, and provides students with effective research strategies to serve them throughout their academic years and professional careers. The authors are a librarian and award-winning English professor which results in both accessibility and a strong instructional approach.

About the Authors

**Michael C. Alewine** is the Outreach and Distance Education Librarian at the University of North Carolina.

**Mark Canada** is Vice Chancellor for Academic Affairs and Professor of English at Indiana University Kokomo, 2008 recipient of the University of North Carolina Board of Governors Award for Excellence in Teaching.
Strategic Social Media is the first textbook to go beyond marketing plans and how-to guides, to provide an overview of the theories, action plans, and case studies necessary for teaching students and readers about utilizing social media to meet marketing goals. It explores the best marketing practices for reaching business goals, while also providing strategies that readers can apply to any past, present or future social media platform, and provides comprehensive treatment of social media in five distinct sections: landscape, messages, marketing and business models, social change, and the future. The book emphasizes social responsibility and ethics, and how this relates to capitalizing on market share and highlights marketing strategies grounded in research that explains how practitioners can influence audience behaviour. Each chapter introduces theory, practice, action plans, and case studies to teach students the power and positive possibilities that social media hold.

About the Authors

L. Meghan Mahoney is Associate Professor at West Chester University of Pennsylvania, Chair of the Management, Marketing & Programming Division of the Broadcast Education Association, and Social Media Coordinator for the Eastern Communication Association.

Tang Tang is Associate Professor and Director of Graduate Studies in the School of Communication at The University of Akron and a Faculty Fellow of the National Association of Television Program Executives.
An accessible and well-balanced introduction to the main issues in political philosophy written by an author team from the fields of both philosophy and politics, this book connects issues at the core of political philosophy with current, live debates in policy, politics, and law. It addresses different ideals of political organization, such as democracy, liberty, equality, justice, and happiness, as well as topics including the obligation to obey the law, war and terrorism, the boundaries of justice, politics and religion, and ethics in public life. Written with great clarity, making it accessible and engaging to those who have little or no prior knowledge of political philosophy, the text is supported by supplemental pedagogical and instructor material on the This Is Philosophy series site.
The House of Commons 1509-1558 offers readers a groundbreaking examination of the role and significance of the British House of Commons during the Tudor period. It utilizes new scholarship, archival research, and never-before-published images to enhance our understanding, and details all aspects of the institution, including elections and electoral practice, membership, organization, the House in session, and legislation. The book addresses innovations in the conduct and management of the House during this time, such as the introduction of divisions and increasing bureaucratization. It demonstrates the turbulent nature of the House during the Tudor age and re-evaluates the nature of political opposition.

About the Author

Alasdair Hawkyard is a Fellow of the Society of Antiquaries and the Royal Historical Society. He was formerly co-editor and Principal Research Assistant on the 1509-1558 section of the History of Parliament. He is the co-editor of Sir Thomas Duppas Commonplace Book (Wiley Blackwell, 2015) and co-author of The Counties of Britain: A Tudor Atlas by John Speed (1988).
Assessments in Forensic Practice: A Handbook provides practical guidance in the assessment of the most frequently encountered offender subgroups found within the criminal justice system.

Topics include: criminal justice assessments; offenders with mental disorders; family violence; policy; and practice.

About the Authors
Kevin D. Browne is Professor of Forensic Psychology and Child Health at the University of Nottingham.

Anthony R. Beech is Professor of Criminological Psychology, University of Birmingham.

Leam A. Craig is Director of Forensic Programmes at Forensic Psychology Practice Ltd, and an Honorary Lecturer in Forensic Psychology at the University of Birmingham.
Clinical Interviewing
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John Sommers-Flanagan & Rita Sommers-Flanagan

Previous Edition: 978-1-119-08423-5

Clinical Interviewing blends a personal and easy-to-read style with a unique emphasis on both the scientific basis and interpersonal aspects of mental health interviewing. This invaluable text provides vast insight into and practical examples of useful interviewing techniques for more effective therapy.

About the Authors
John Sommers-Flanagan is a clinical psychologist, Professor of Counselor Education at the University of Montana and is co-author of over 40 professional publications.

Rita Sommers-Flanagan, Ph.D., was a Professor of Counselor Education at the University of Montana and a clinical psychologist, and has worked with youth, families, and women for many years.
The first textbook of its kind, *Critical Educational Psychology* is a forward-thinking approach to educational psychology that uses critical perspectives to challenge current ways of thinking and improve practice. It examines issues such as the role of education; the relationship between teaching and learning; the impact of gender, faith and ethics in educational settings; the construction of rich learning environments; and notions of normalcy, difference, and disability. There are many helpful pedagogical features including discussion points, mini exercises, essay questions, key terminology, theoretical starting points, and further reading suggestions. This is an excellent foundational text for trainees in educational and school psychology as well as those practicing and researching in those fields and related ones across psychology and education.

**About the Authors**

**Antony Williams,** University of Sheffield, UK is also a practicing educational psychologist.

**Tom Billington,** University of Sheffield.

**Dan Goodley,** University of Sheffield and author or editor of many books in the field.

**Tim Corcoran,** The Victoria Institute, Victoria University, Melbourne, Australia.
Cyberpsychology
The Study of Individuals, Society and Digital Technologies
Monica Whitty & Garry Young
Nottingham Trent

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An important new BPS Textbook in Psychology exploring the interactions between individuals, societies, and digital technologies, this book outlines key theories and empirical research within cyberpsychology and provides critical assessments of this rapidly changing field. It identifies areas in need of further research and ways to use digital technologies as a research tool, and covers topics such as online identity, online relationships and dating, pornography, children’s use of the internet, cyberbullying, online games and gambling, and deception and online crime. This is an engaging and accessible textbook for students at the undergraduate and graduate level with real life examples, activities, and discussion questions.

About the Authors
Monica T. Whitty is Professor of Contemporary Media in the Department of Media and Communication at the University of Leicester, UK and co-author or co-editor of several books.
Garry Young is Senior Lecturer in the Division of Psychology at Nottingham Trent University, UK.

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Hands-on, practical guidance for KTEA-3 and WIAT-III assessment

Written by expert authors Kristina Breaux and Elizabeth Lichtenberger, Essentials of KTEA-3 and WIAT-III Assessment offers up-to-date, comprehensive, step-by-step instruction in the accurate and effective use of the newest editions of the Kaufman Test of Educational Achievement (KTEA-3) Comprehensive Form, KTEA-3 Brief Form, and the Wechsler Individual Achievement Test (WIAT-III). Designed to provide in-depth information in an easy-to-use reference format, the book provides guidelines and tips for administration, scoring, and interpretation that go beyond the information provided in the test manuals. A complete guide is included for digital administration and scoring using Q-interactive, automated scoring using Q-global, and hand scoring. This book makes score interpretation easier by explaining what each score measures and the implications of a high or low score.

About the Authors

Kristina C. Breaux is a Senior Research Director with Pearson Clinical Assessment, educational therapist and learning disabilities consultant, researcher, and author.

Elizabeth O. Lichtenberger is a licensed clinical psychologist in California, an Adjunct Faculty member at Alliant International University, San Diego, a consultant and trainer for organizations and individual psychologists, and author of numerous books and articles.
The MCMI®-IV assesses a wide range of information related to a client’s personality, emotional adjustment, test-taking approach, and other critical information. Interpretation and reporting serve as a basis from which therapeutic interventions are designed, so quality and accuracy is of utmost importance every step of the way. This is the definitive source of up-to-date, practical information for clinicians and students using the MCMI-IV inventory. Step-by-step guidelines walk through the process of administering the assessment, with a profile and demonstration of the clinical process from administration to treatment. Expert discussion helps inform higher-quality therapeutic interventions. The link between assessment and intervention is emphasized throughout, as well as coverage of relevant populations and clinical applications, to provide a well-rounded understanding while illuminating the uses of the MCMI®-IV. This book provides instruction and clarification from the foremost experts and step-by-step guidelines for administering the MCMI®-IV.

About the Authors

Seth Grossman is the primary co-author of the MCMI-IV test, and has co-authored over 40 texts, chapters, psychological instruments, and peer-reviewed articles related to the Millon Inventories, and has led Millon trainings nationally and internationally for over 10 years.

Blaise Amendolace is the psychological assessments coordinator at Florida Atlantic University’s counseling center.
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Susan Jacob, Dawn M. Decker & Elizabeth T Lugg
Central Michigan University & Central Michigan University

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**About the Authors**

Susan Jacob is a Professor of Psychology at Central Michigan University.  
Dawn M. Decker is an Associate Professor in the Department of Counseling and Special Education at Central Michigan University.  
Elizabeth T Lugg is a licensed attorney and an Associate Professor in the Department of Educational Administration and Foundations at Illinois State University.
The International Handbook of Suicide Prevention

2nd Edition

Rory O’Connor & Jane Pirkis

University of Glasgow, UK; Jane Pirkis, University of Melbourne, Australia

ISBN: 978-1-118-90327-8 | OCT 2016 | 800PP

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About the Authors

Rory O’Connor is Professor of Health Psychology at the University of Glasgow and Past President of the International Academy of Suicide Research. O’Connor leads the Suicidal Behaviour Research Laboratory at Glasgow, one of the leading suicide and self-harm research groups in the UK. He has published extensively in the field of suicide and self-harm, and is also Deputy Chief Editor of Archives of Suicide Research, an Associate Editor of Suicide and Life-Threatening Behavior, and a member of the editorial board of Crisis.

Jane Pirkis is the Director of the Centre for Mental Health in the Melbourne School of Population and Global Health at the University of Melbourne, and General Secretary of the International Association for Suicide Prevention. She has published extensively on suicide and its prevention.

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Charting the theological and cultural potency of Acts across the timespan of Christian history, this work of profound scholarship reveals the full extent of the New Testament books religious, artistic, literary, and political influence. It reveals the influence of Acts at key turning points in the history of the Christian church, tracing the rich and varied artistic and cultural heritage rooted in Acts, from music to literature. It analyzes the political significance of the book as a touchstone in the church’s external relations and provides detailed commentary on the exegesis of Acts down the centuries.

About the Authors

**Heidi J. Hornik**, Professor, Baylor University, USA, is a highly respected art historian and scholar and co-authored the three-volume series *Illuminating Luke* (2003, 2005, 2007) with her collaborator on this publication, Mikeal Parsons, with whom she also co-edited *Interpreting Christian Art* (2004).

**Mikeal C. Parsons** is Professor and Macon Chair in Religion at Baylor University, USA.
The Wiley-Blackwell Companion to Christian Mysticism brings together a team of leading international scholars to explore the origins, evolution, and contemporary debates relating to Christian mystics, texts, and the movements they inspired.

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- Offers a brilliant synthesis of the key figures and historical periods of mysticism; its core themes, such as heresy, gender, or aesthetics; and its theoretical considerations, including theological, literary, social scientific, and philosophical approaches
- Features chapters on current debates such as neuroscience and mystical experience, and inter-religious dialogue

About the Author

Julia A. Lamm is Associate Professor of Theology at Georgetown University in Washington, D.C. She is a recipient of an Alexander von Humboldt Fellowship for research at the Academy of Sciences in Berlin. She is also the author of The Living God: Schleiermacher’s Theological Appropriation of Spinoza (1996) and co-editor of a forthcoming volume on Schleiermacher, The Christmas Dialogue and Other Selections. She has also published articles on Julian of Norwich.

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This text offers essential information for anyone studying social policy, from undergraduates on introductory courses to those pursuing postgraduate or professional programmes, accompanied by updated online resources to support independent learning and skill development with chapter overviews, study questions, guides to key sources and career opportunities, a key term glossary, and more.

**About the Authors**

**Pete Alcock** is Professor of Social Policy and Administration at the University of Birmingham, UK.

**Tina Haux** is Lecturer in Social Policy at the University of Kent, UK, and a member of the Qstep team at Kent.

**Margaret May** is Honorary Research Fellow in Social Policy and a member of the Centre for Household Asset and Savings Management (CHASM) at the University of Birmingham, UK.

**Sharon Wright** is Senior Lecturer in Public Policy at the University of Glasgow, Scotland.

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The Seafood and Aquaculture Marketing Handbook is an expanded and revised new edition of the Aquaculture Marketing Handbook, originally published in 2009. Written by three authors with vast international experience, the Seafood and Aquaculture Marketing Handbook is an important introduction to aquaculture and seafood marketing for those interested in the subject and those new to the professional field. The body of commercially important knowledge presented in this book will also make it a valuable reference for even the most experienced aquaculture and seafood trade professionals. Libraries in all universities and research establishments where aquaculture, fisheries, economics and marketing, and food science technologies are studied and taught should have copies of this important book.

About the Authors


Kwamena Quagrainie is Professor and Aquaculture Marketing Director in the Department of Agricultural Economics, Purdue University and co-authored the Aquaculture Marketing Handbook.

Madan Dey is Professor of Aquaculture Economics and Marketing, at the Aquaculture/Fisheries Center, University of Arkansas at Pine Bluff.
Bioenergy provides readers with an understanding of foundational information on 1st, 2nd, and 3rd generation biofuels. Coverage spans from feedstock production of key energy sources such as grasses, canes, and woody plants through chemical conversion processes and industrial application. Each chapter provides a thorough description of fundamental concepts, definitions of key terms, case studies and practical examples and exercises.

About the Authors

Yebo Li is an Assistant Professor in the Department of Food, Agricultural, and Biological Engineering and Director of the Bioproducts and Bioengineering Laboratory at the Ohio State University.

Samir Kumar Khanal, PhD, P.E. is an Associate Professor of Bioengineering in the Bioenergy Research Group in the Department of Molecular Biosciences and Bioengineering at the University of Hawaii-Manoa.
Biomedical Devices
Design, Prototyping, and Manufacturing
Tugrul Özel, Paulo Bártolo, Elisabetta Ceretti, Joaquim De Ciurana Gay, Ciro Angel Rodriguez & Jorge Vicente Lopes Da Silva


Biomedical Devices: Design, Prototyping, and Manufacturing features fundamental discussions of all facets of materials processing and manufacturing processes across a wide range of medical devices and artificial tissues. This is the first compilation of information on the design, prototyping, and manufacture of medical devices into one volume, offering in-depth coverage of medical devices, beginning with an introductory overview through to the design, manufacture, and applications, and featuring examples of a variety of medical applications of devices, including biopsy micro forceps, micro-needle arrays, wrist implants, spinal spacers, and fixtures. The ideal reference source for students, doctors, scientists, and technicians interested in the development and applications of medical devices.

About the Authors
Tugrul Özel, Rutgers University, USA.
Paulo Bártolo, University of Manchester, UK.
Elisabetta Ceretti, University of Brescia, Italy.
Joaquim De Ciurana Gay, University of Girona, Spain.
Ciro Angel Rodriguez, Tecnológico de Monterrey, Mexico.
Jorge Vicente Lopes Da Silva, Renato Archer, Brazil.
This latest volume in the Advanced Biotechnology series provides an overview of the main production hosts and platform organisms used today as well as promising future cell factories in a two-volume book. Alongside describing tools for genetic and metabolic engineering for strain improvement, the authors also impart topical information on computational tools, safety aspects and industrial-scale production. Following an introduction to general concepts, historical developments and future technologies, the text goes on to cover multi-purpose bacterial cell factories, including those organisms that exploit anaerobic biosynthetic power. Further chapters deal with microbes used for the production of high-value natural compounds and those obtained from alternative raw material sources, concluding with eukaryotic workhorses of interest to biotechnologists and microbiologists, as well as those working in the biotechnological, chemical, food and pharmaceutical industries.

About the Authors

Christoph Wittmann, Saarland University, Saarbrücken, Germany.
James Liao, President of Academia Sinica in Taiwan.
Gregory Stephanopoulos, Massachusetts Institute of Technology (MIT, USA).
Sang Yup Lee, Korea Advanced Institute of Science and Technology (KAIST).
Jens Nielsen, Professor and Director to Chalmers University of Technology, Sweden.

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Industrial Biotechnology
Products and Processes
James C. Liao, Christoph Wittmann, Sang Yup Lee, Jens Nielsen & Gregory Stephanopoulos
University of California, Los Angeles, USA; TU Braunschweig, Braunschweig, Germany; KAIST, Daejon, Republik Korea; Chalmers University, Göteborg, S; Massachusetts Institute of Technology, USA

Series: Advanced Biotechnology
ISBN: 978-3-527-34181-8 | DEC 2016 | 640PP

In industrial biotechnology, a diverse set of microorganisms and biocatalysts is used to produce chemicals, materials and energy in an environmentally friendly and resource-efficient way. This book gives an overview about the main product classes and platform chemicals produced by biotechnological processes today, with applications in the food, healthcare and fine chemical industry. For example, chapters deal with the production of drugs and flavours as well as amino acids, bio-based monomers and polymers and biofuels. In addition, basic insights are given to the biotechnological processes yielding such products and how large-scale production can be enabled and improved.

About the Authors
Christoph Wittmann, Saarland University, Saarbrücken, Germany.
James Liao, President of Academia Sinica in Taiwan.
Gregory Stephanopoulos, Massachusetts Institute of Technology (MIT, USA).
Sang Yup Lee, Korea Advanced Institute of Science and Technology (KAIST).
Jens Nielsen, Professor and Director to Chalmers University of Technology, Sweden.
Cancer, which has become the second-most prevalent health issue globally, is essentially a malfunction of cell signaling. Understanding how the intricate signaling networks of cells and tissues allow cancer to thrive - and how they can be turned into potent weapons against it - is the key to managing cancer in the clinic and improving the outcome of cancer therapies. In their ground-breaking textbook, the authors provide a compelling story of how cancer works on the molecular level, and how targeted therapies using kinase inhibitors and other modulators of signaling pathways can contain and eventually cure it.

The first part of the book gives an introduction into the cell and molecular biology of cancer, focusing on the key mechanisms of cancer formation. The second part of the book introduces the main signaling transduction mechanisms responsible for carcinogenesis and compares their function in healthy versus cancer cells. In contrast to the complexity of its topic, the text is easy to read. 14 specially prepared teaching videos on key concepts and pathways in cancer signaling are available from a companion website.

About the Authors

Professor Dr. Christoph Wagener, University Medical Center Hamburg-Eppendorf, has authored more than 100 original scientific publications, 15 scientific reviews and 13 book chapters.

Professor Dr. Oliver Müller, University for Applied Sciences Kaiserslautern, Germany, is author of more than 80 original articles, 10 patents, 15 scientific reviews and 4 book chapters and recipient of several science awards.
This most recent volume in the series *Drug Discovery in Infectious Diseases* focuses on the use of metabolic analysis of protozoic parasites for rational drug discovery design. Covering all classes of parasites, this ready reference covers such methodologies as virtual compound, high throughput, and cellular screening, as well as computer-assisted and structure-based drug design, and pathway modelling. Furthermore, several chapters focus on the latest technologies increasingly being used to dissect metabolic pathways and cellular processes, while enzymatic drug targets for which structural, knock out and inhibitor data are available are also included as well as recent antiparasitic agents targeting particular pathways serving as lead compounds for further drug development. With its real-life success stories, this is a must-have for all professionals dealing with drug discovery in parasitology.

**About the Authors**

**Sylke Müller,** University of Glasgow.

**Rachel Cerdan,** University of Montpellier, France.

**Ovidiu Radulescu,** University of Montpellier.

**Ewelina Guca,** University of Montpellier.

**Paul M. Selzer** MSD Animal Health Innovation GmbH, Germany, visiting professor and teacher at the Biochemistry Institute of the University of Tübingen, Germany and honorary professor of the Department of Infection, Immunity, and Inflammation at the University of Glasgow, UK.
This informative text explains the phenomenon of mechanobiology, highlighting the extent to which biological tissues are exposed to the mechanical environment, demonstrating the importance of the mechanical environment in living systems, critically reviewing experimental procedure with reference to the mechanical environment, and illustrating the how appropriate procedures can further biomedical research. The book covers as many tissue/organ systems as possible, but concentrates mainly on musculoskeletal, vascular, skin and lung tissues where there a vast array of medical conditions, and in which medical research ignores the input of the mechanical environment.

About the Author

Simon Rawlinson is a Lecturer in the Institute of Bioengineering in the Queen Mary’s School of Medicine & Dentistry. The majority of his research has concentrated on the response of limb bone cells in situ to applied, physiological, dynamic mechanical loads with the objective of gaining an insight to the mechanotransduction consequences to usage.
This book focuses on recent developments and new approaches to study egg and sperm cells and embryo development and it addresses the increasing demand for in vitro fertilization (IVF) and assisted reproductive technologies (ART) to overcome infertility problems that are encountered by an increasing number of couples worldwide.

It includes 30-40 chapters written by experts in their specific fields to provide information on in vitro sperm and egg preparations; in vitro oocyte maturation; in vitro fertilization; in vivo and in vitro development of spermatozoa and oocytes; assessment of sperm and oocyte quality; cell and molecular biology of sperm and egg cells; cryopreservation of sperm, eggs, embryos, and reproductive tissue; Assisted Reproductive Technologies (ART) including intracytoplasmic sperm injection (ICSI); pre-implantation development; post-implantation development; genetic and epigenetic considerations; production of embryonic stem cells for patient-specific therapies; microinjection of specific factors for molecular therapies; and others.

About the Author

Dr. Heide Schatten is Professor at the University of Missouri, Columbia. She has received numerous awards and has published over 200 papers, 14 book chapters and is editor of several journals.
Neotectonics involves the study of the motions and deformations of the Earth’s crust that are current or recent in geologic time.

This volume focuses on the neotectonics of the Eastern Mediterranean region, which has experienced many major extensive earthquakes, including the devastating Izmit, Turkey earthquake on August 17, 1999 which killed around 17,000 people, injured 44,000, and left half a million people homeless. Since then, several North American, European, and Turkish research groups have studied the neotectonics and earthquake potential of the region using different geological and geophysical methods, including GPS studies, geodesy, and passive source seismology and this volume highlights the work involving the Eastern Mediterranean region. The region has one of the world’s longest and most studied active strike-slip (horizontal motion) faults: the east-west trending North Anatolian fault zone, which is very similar to the San Andreas fault in California. This is a valuable resource for geoscientists, particularly in the field of tectonophysics, geophysics, geodynamics, seismology, structural geology, environmental geology, and geoengineering.

About the Authors
İbrahim Çemen is a Professor of Geology in the Department of Geological Sciences at the University of Alabama. He has published over 50 research articles in several high impact journals.

Yücel Yilmaz is an Emeritus Professor of Geology in the Faculty of Mines of The Istanbul Technical University. He has published over 120 research articles in several journals and books.
Seismic inversion aims to reconstruct a quantitative model of the Earth subsurface, by solving an inverse problem based on seismic measurements. There are at least three fundamental issues to be solved simultaneously: non-linearity, non-uniqueness, and instability. This book covers the basic theory and techniques used in seismic inversion, corresponding to these three issues, emphasising the physical interpretation of theoretical concepts and practical solutions.

This book is written for masters and doctoral students who need to understand the mathematical tools and the engineering aspects of the inverse problem needed to obtain geophysically meaningful solutions. Building on the basic theory of linear inverse problems, the methodologies of seismic inversion are explained in detail, including ray-impedance inversion and waveform tomography etc. The application methodologies are categorised into convolutional and wave-equation based groups. This systematic presentation simplifies the subject and enables an in-depth understanding of seismic inversion.

This book also provides a practical guide to reservoir geophysicists who are attempting quantitative reservoir characterisation based on seismic data. Philosophically, the seismic inverse problem allows for a range of possible solutions, but the techniques described herein enable geophysicists to exclude models that cannot satisfy the available data. This book summarises the author’s extensive experience in both industry and academia, and includes innovative techniques not previously published.

About the Author

Yanghua Wang is a Professor at Imperial College London and has held the position of Director of the Centre for Reservoir Geophysics since 2004. He is a founding editor of the Journal of Geophysics and Engineering. He is also a Fellow of the Institute of Physics (FIntP) and a Fellow of the Royal Astronomical Society (FRAS).
The book aims to integrate our understanding of mammalian societies into a novel synthesis that is relevant to behavioural ecologists, ecologists, and anthropologists. It adopts a coherent structure that deals initially with the characteristics and strategies of females, before covering those of males, cooperative societies and hominid societies. It reviews our current understanding both of the structure of societies and of the strategies of individuals; it combines coverage of relevant areas of theory with coverage of interspecific comparisons, intraspecific comparisons and experiments; it explores both evolutionary causes of different traits and their ecological consequences; and it integrates research on different groups of mammals with research on primates and humans and attempts to put research on human societies into a broader perspective.

About the Author

Professor Tim Clutton-Brock is one of the world’s leading zoologists. As of 2008, he was the Prince Philip Professor of Ecology and Evolutionary Biology, and head of the Large Animal Research Group at the Department of Zoology of the University of Cambridge, and a fellow of Magdalene College, Cambridge. He also holds extraordinary professorships in the Department of Zoology and Entomology and the Mammal Research Institute of the University of Pretoria, South Africa. He was elected a Fellow of the Royal Society in 1987. He is an ISI Highly Cited researcher. He won the 1997 Frink Medal of the Zoological Society of London. In 2012, he was awarded the Darwin Medal from the Royal Society for his work on the diversity of animal societies and demonstration of their effects on the evolution of reproductive strategies, and the operation of selection and the dynamics of populations. Professor Clutton-Brock’s early work was on social behaviour in primates. Much of his recent work focuses on three long-term studies: of red deer on the Scottish island of Rùm, of Soay sheep on St Kilda, and of meerkats in the southern Kalahari. He is one of the founders of the Kalahari Meerkat Project, the subjects of which are featured in the television programme Meerkat Manor, and the BBC’s Natural World series.
Provides a comprehensive overview of one of nature’s most engaging mammals, covering fossil history, taxonomy, genetics, physiology, biomechanics, behavior, ecology, and conservation. It includes genetic analysis of five of the six subspecies of modern giraffes and giraffe network studies from Laikipia Kenya, Etosha National Park, Namibia and Samburu National Reserve, Kenya.

About the Author

**Professor Bryan Shorrocks**, Environment Department, York, was for many years senior editor of the Journal of Animal Ecology and is presently one of the Editors for the *African Journal of Ecology*. He has twice been a member of the Council of the British Ecological Society.
Knowledge of the evolutionary history of birds has much improved in recent decades. Fossils from critical time periods are being described at unprecedented rates and modern phylogenetic analyses have provided a framework for the interrelationships of the extant groups. This book gives an overview of the avian fossil record and its paleobiological significance, and it is the only up-to-date textbook that covers both Mesozoic and more modern-type Cenozoic birds in some detail. The reader is introduced to key features of basal avians and the morphological transformations that have occurred in the evolution towards modern birds. An account of the Cenozoic fossil record sheds light on the biogeographic history of the extant avian groups and discusses fossils in the context of current phylogenetic hypotheses.
Roots and tubers are considered as the most important food crops after cereals and contribute significantly to sustainable development, income generation and food security especially in the tropical regions. The perishable nature of roots and tubers demands appropriate storage conditions at different stages starting from farmers to its final consumers. Because of their highly perishable nature, the search for efficient and better methods of preservation/processing has been continuing alongside the developments in different arena. This book covers the processing and technological aspects of root and tuber foods, detailing the production and processing of roots and tubers such as taro, cassava, sweet potato, yam and elephant foot yam. Featuring chapters on anatomy, taxonomy and physiology, molecular and biochemical characterization, GAP, GMP, HACCP, storage techniques, as well as the latest technological interventions in taro, cassava, sweet potato, yam and elephant foot yam.

About the Authors

**Dr. Harish K. Sharma** is a Professor in the Food Engineering and Technology Department, SLIET, Longowal, India.

**Prof Nicolas Y. Njintang** is Professor in Food Sciences and Nutrition at the National School of Agro-Industrial Sciences (ENSAI), University of Ngaoundere, Cameroon.

**Prof. Rekha S. Singhal** is a Professor in the Food and Fermentation Technology Department at the Institute of Chemical Technology, Mumbai, India.

**Pragati Kaushal,** Master (M. Tech) in Food Engineering and Technology, is an Assistant Professor at the Food Engineering and Technology Department, SLIET, Longowal, India.
Crime Scene Management
Scene Specific Methods, 2nd Edition
Raul Sutton, Keith Trueman & Christopher Moran
University of Wolverhampton; West Midlands Police (Retired)

Previous Edition: 978-0-470-01679-4

Crime Scene Management is an accessible introduction to the common forms of evidence that may be encountered at a scene of crime and the techniques used for recovery of that evidence. The book is clearly focused on the techniques for handling crime scenes from the role of the first officer attending through to the specialist personnel who may be called to deal with specific evidence types. Clearly structured to enhance student understanding, methods covered include, DNA-rich samples, fingerprints, toolmarks and footwear impressions. Later chapters move on to consider examples of specialised scenes such as arson and vehicle crime. The content of each chapter can be tested with self-assessment questions to reinforce student understanding.

About the Authors
Raul Sutton, University of Wolverhampton, UK.
Keith Trueman is a retired West Midlands Police officer.
Christopher Moran, University of Wolverhampton, UK.
Forensic medicine is a broad and evolving field with areas of rapid progress embracing both clinical and pathological aspects of practice, in which there may be considerable overlap. This is the second volume in a series that provides a unique, in-depth and critical update on selected topics of direct relevance to those practising in the field of clinical forensic medicine and related areas including lawyers, police, medical practitioners, forensic scientists, and students. The book endeavours to maintain a relevance to an international, multiprofessional audience and include chapters on DNA decontamination, the toxicity of novel psychoactive substances, the relevance of gastric contents in the timing of death, the effects of controlled energy devices, the main risk factors for driving impairment, the risk factors for harm to health of detainees in short-term custody, autoerotic deaths, child maltreatment and neglect, and the investigation of potential non-accidental head injury in children. Also included are chapters on excited delirium syndrome, automatism and personality disorders. Two topics not generally covered in standard clinical forensic medical textbooks include a forensic anthropological approach to body recovery in potential crimes against humanity and risk management and security issues for the forensic practitioner investigating potential crimes against humanity in a foreign country.

About the Authors

Dr John Gall is a consultant forensic physician. He is Director of Southern Medical Services Pty Ltd; Associate Professor in the Department of Paediatrics at The University of Melbourne; Consultant at the Victorian Forensic Paediatric Medical Service at the Royal Children's Hospital and Monash Medical Centre; President of the World Police Medical Officers; and Vice-President of the Australasian Association of Forensic Physicians.

Jason Payne-James is a Consultant Forensic Physician Honorary Senior Lecturer at the Cameron Forensic Medical Sciences, Barts and the London SMD; President at the Faculty of Forensic and Director of Forensic Healthcare Services Ltd.
The interpretation and evaluation of scientific evidence and its presentation in a court of law is central both to the role of the forensic scientist as an expert witness and to the interests of justice. This book provides a thorough and detailed discussion of the principles and practice of evidence interpretation and evaluation by using real cases by way of illustration. The presentation is appropriate for students of forensic science or related disciplines at advanced undergraduate and master’s level or for practitioners engaged in continuing professional development activity.

About the Author

Craig Adam is based at the School of Physical and Geographical Sciences, Keele University, Keele, UK. He has been involved in forensic science education and research for almost fifteen years while working at Keele University. Originally a physicist by training, he has particular interests in the mathematical and statistical aspects of the discipline, in addition to his research on the physicochemical characterisation of forensic materials, document analysis and blood dynamics. He has published across all these areas, including the textbook Essential Mathematics and Statistics for Forensic Science, available from Wiley-Blackwell. He has extensive experience in developing teaching resources across the spectrum of forensic science and, over recent years, has focused on the interface between science and the court. This has led him to explore the legal, scientific and statistical perspectives driving the evolution of the crucial step in the progress of scientific evidence from the crime scene through the legal debate to its influence on the ultimate decision by the court.
The AGT Cytogenetic Laboratory Manual
Marilyn Arsham, Helen Lawce & Margaret Barch


The AGT Cytogenetic Laboratory Manual is a comprehensive treatment of cytogenetics laboratory practices. The text presents procedures that are used in the clinical environment and explains the scientific theories behind those procedures. One of the most valuable assets is its rich resource of laboratory-tested protocols that are currently being used in leading laboratories, along with definitions, troubleshooting tables, and practical advice for nearly every area of interest to cytogeneticists.

About the Authors

Marilyn Arsham, lab technologist at Danbury Hospital, was a co-editor and contributor to the first edition of the AGT Laboratory Manual.

Margaret Barch is a Laboratory Manager and Interim Director of the Weisskopf Child Evaluation Center, University of Louisville.

Helen Lawce is a Cytogenetic Technologist, Oregon Health & Sciences University and an Associate Editor of Applied Cytogenetics and the Journal of the Association of Genetic Technologists.
Molecular Mycorrhizal Symbiosis opens with introductory chapters on the biology, structure and phylogeny of the major types of mycorrhizal symbioses. Chapters then review different molecular mechanisms driving the development and functioning of mycorrhizal systems and molecular analysis of mycorrhizal populations and communities. The book closes with chapters that provide an overall synthesis of field and provide perspectives for future research. Authoritative and timely, Molecular Mycorrhizal Symbiosis, is an essential reference from those working in plant and fungal biology.

About the Author

Francis M. Martin is Research Director at the French National Institute for Agricultural (INRA) and leader of the INRA-Nancy Center of Exellence in Forestry. Dr. Martin has been researching plant effectors for more than a decade. He has published more than 140 peer-reviewed papers, 17 review papers and 35 book chapters.
This cutting-edge, interdisciplinary volume describes established and state of the art approaches for exploring the pathways that influence and control appetite, including: behavioural, electrophysiological, neuroanatomical, gene knockout and pharmacological techniques.

The book presents key peptide and neurotransmitter systems, together with newly emerging concepts of metabolic signalling and hypothalamic inflammation. The impact of early life experience on neuroendocrine appetite circuits is also looked at, including early programming of these circuits by circulating hormones. Finally, new emerging therapeutic approaches to appetite suppression are discussed, including those linked to bariatric (weight loss) surgery.

*Neuroendocrinology of Appetite* is especially focused on established and emerging technologies and approaches for investigating appetite control. It is written so as to provide an overview of sufficient depth for an undergraduate or new scientist in the field to come up to speed in the complementary approaches used by researchers in this field. Taking an interdisciplinary approach, the book aims to appeal to all those with a basic, clinical or therapeutic interest in research into obesity and eating disorders.

**About the Authors**

**Professor Suzanne L Dickson**, The Sahlgrenska Academy of the University of Gothenberg, Sweden.

**Professor Julian G. Mercer**, Rowett Institute of Nutrition and Health, University of Aberdeen, UK.
This volume discusses the role of the microbiota in maintaining human health and introduces the reader to the biology of bacterial dysbiosis and its potential role in both bacterial disease and in idiopathic chronic disease states. The book is divided into five chapters, starting from the concept of the human bacterial microbiota with particular attention being paid to the microbiota of the gut, oral cavity and skin. A key methodology for exploring the microbiota, metagenomics, is also described. The second section attempts to show the reader the cellular, molecular and genetic complexities of the bacterial microbiota, its myriad connections with the host and how these can maintain tissue homeostasis. Section 3 begins to consider the role of dysbioses in human disease states, dealing with two of the commonest bacterial diseases of humanity—periodontitis and bacterial vaginosis. The composition of some, if not all microbiotas can be controlled by the diet and this is also dealt with in this section. In section 4 the discussion moves onto the major ‘idiopathic’ diseases of Homo sapiens and the potential role that dysbiosis could play in their induction and chronicity. This is a rapidly growing area where major discoveries are expected. Section 5 takes the reader to the therapeutic potential of manipulating the microbiota, introducing the concepts of probiotics, prebiotics and the administration of healthy human faeces (faecal microbiota transplantation), and imagines the future of medical treatment viewed from a microbiota-centric position.

About the Authors

Luigi Nibali is in the Department of Restorative Dental Sciences at the UCL Eastman Dental Institute.

Brian Henderson is a Professor of Microbial Diseases in the UCL School of Life and Medical Sciences.
Handbook of Neurobehavioral Genetics and Phenotyping
Valter Tucci


The *Handbook of Behavioral Genetics and Phenotyping* represents an integrative approach to neurobehavioural genetics. This is the first volume in which traditionally distant fields including genomics, behaviour, electrophysiology, neuroeconomics, and computational neuroscience, among others, are evaluated together and simultaneously accounted for during discussions of future perspectives.

**About the Author**

**Valter Tucci** is currently Team Leader of the Neurobehavioural Group at the Italian Institute of Technology (IIT). His research focuses on analysis of the effects that genetic and epigenetic mechanisms exert on sleep and cognition.
Technological advances have greatly increased the potential for, and practicability of, using medical neurotechnologies to revolutionize how a wide array of neurological and nervous system diseases and dysfunctions are treated. These technologies have the potential to help reduce the impact of symptoms in neurological disorders such as Parkinson’s Disease and depression as well as help regain lost function caused by spinal cord damage or nerve damage. *Medical Neurobionics* is a concise overview of the biological underpinnings of neurotechnologies, the development process for these technologies, and the practical application of these advances in clinical settings.

**About the Author**

**Robert Shepherd** is Professor of Medical Bionics and Director of the Bionics Institute in the Department of Otolaryngology at the University of Melbourne.
Plant Cells and their Organelles

Dr William Dashek


Plant Cells and Their Organelles provides a comprehensive overview of the structure and function of plant organelles. The text focuses on subcellular organelles while also providing relevant background on plant cells, tissues and organs. Coverage of the latest methods of light and electron microscopy and modern biochemical procedures for the isolation and identification of organelles help to provide a thorough and up-to-date companion text to the field of plant cell and subcellular biology. The book is designed as an advanced text for upper-level undergraduate and graduate students with student-friendly diagrams and clear explanations.

About the Author

William V. Dashek, Consulting Biologist (Retired) Mary Baldwin College, Richmond/Staunton, VA, USA.
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Contemporary Planetary Robotics
An Approach Toward Autonomous Systems
Yang Gao

ISBN: 978-3-527-41325-6 | AUG 2016 | 432PP

Filling the gap for readers from both academia and industry wishing to pursue their studies and/or careers in this emerging field, this is a one-stop tour of the history, evolution, key systems, and technologies of planetary robotics. The book provides a comprehensive introduction to the R&D aspects, ranging from robotic vision, surface rover locomotion, navigation, and remote/semi/autonomous operation, to sample acquisition/preparation, and subsurface mobility. It equally offers a systematic overview of major planetary robotic systems, covering the rovers, manipulators, samplers and drillers. It also includes a chronicle to explain the evolution of robotics within planetary missions since the Surveyor 3 mission in the 1960s. The definitive reference on autonomous robotics and an important contribution to current and future programs run by such space agencies as ESA and NASA.

About the Author
Professor Yang Gao is the Professor of Autonomous Systems within Surrey Space Centre at the University of Surrey, United Kingdom. She heads the Surrey Technology for Autonomous Systems and Robotics (STAR) Lab that specializes in autonomy & modeling, visual navigation, modern control theories, robot soil interaction and biomietic mechanisms with applications to planetary robotics and systems.
This text covers the fundamentals and techniques of multiple biological sequence alignment and analysis, and shows readers how to choose the appropriate sequence analysis tools for their tasks. The book describes the traditional and modern approaches in biological sequence alignment and homology search over 11 chapters which explore the full spectrum of the field, from alignment algorithms to scoring methods, practical techniques, and alignment tools and their evaluations. It describes theories and developments of scoring functions and scoring matrices and examines phylogeny estimation and large-scale homology search. *Multiple Biological Sequence Alignment* is a reference for researchers, engineers, graduate and post-graduate students in bioinformatics, and system biology and molecular biologists.

**About the Authors**

**Ken Nguyen** is an associate professor at Clayton State University, GA, USA.

**Xuan Guo** is a postdoctoral associate at Oak Ridge National Lab, USA.

**Yi Pan** is a Regents’ Professor of Computer Science and an Interim Associate Dean and Chair of Biology at Georgia State University.
This reference book originates from the interdisciplinary research cooperation between academia and industry. In three distinct parts, latest results from basic research on stable enzymes are explained and brought into context with possible industrial applications. Downstream processing technology as well as biocatalytic and biotechnological production processes from global players display the enormous potential of biocatalysts. Application of “extreme” reaction conditions (i.e. unconventional, such as high temperature, pressure, and pH value) - biocatalysts are normally used within a well defined process window - leads to novel synthetic effects. Both novel enzyme systems and the synthetic routes in which they can be applied are made accessible to the reader. In addition, the complementary innovative process technology under unconventional conditions is highlighted by latest examples from biotech industry.

**About the Authors**

**Andreas Liese** is Professor for Technical Biocatalysis at the Hamburg University of Technology.

**Dr. Lutz Hilterhaus** is Junior Group Leader at the Institute of Technical Biocatalysis at the TUHH in Hamburg, Germany.

**Garabed Antranikian** is Professor at the Hamburg University of Technology, where he is head of the Institute of Technical Microbiology.
The first comprehensive account of the rapidly growing field of asymmetric dearomatization reactions with a focus on catalytic methods. It introduces the concept of dearomatization and describes recent progress in asymmetric reaction procedures with different catalyst systems, such as organocatalysts, transition metal catalysts, and enzymes. Chapters on dearomatizations of electron-deficient aromatic rings, dearomatization reactions via transition metal-catalyzed cross-couplings as well as dearomatization strategies in the synthesis of complex natural products are also included. Written by pioneers in the field, this is a highly valuable source of information not only for professional synthetic chemists in academia and industry but also for all those are interested in asymmetric methodologies and organic synthesis in general.

About the Author
Shu-Li You is a professor at the State Key Laboratory of Organometallic Chemistry at the Shanghai Institute of Organic Chemistry (SIOC). He has published over 170 peer-reviewed papers, 5 book chapters, and filed over 30 Chinese patents as a co-inventor. He is the recipient of many awards including the Chinese Chemical Society (CCS)-Wiley Young Chemist Award (2007), Thieme Chemistry Journals Award (2010), The National Science Fund for Distinguished Young Scholars (2010), AstraZeneca Excellence in Chemistry Award (2011), CAS Teaching Excellence Award (2012, 2013, 2014), Roche Chinese Young Investigator Award (2014), WuXi PharmaTech Life Science and Chemistry Award (2014), and RSC Merck Award (2015).
Authored by two internationally recognized experts with an excellent track record, this much-needed reference summarizes latest research in the rapidly developing field of stereoselective synthesis of enantiomerically enriched amino acids, particularly of non-proteinogenic origin. It highlights several different catalytic and stoichiometric asymmetric methods for their synthesis and also provides information on origin, biological properties, different synthetic strategies and important applications in medicine and pharmacology. Essential reading for synthetic chemists working in the field of asymmetric synthesis, natural products and peptide synthesis, stereochemistry, medicinal chemistry, biochemistry, pharmacology, and biotechnology.

About the Authors

Ashot Saghyan is Director of the Scientific and Production Center “Armbiotechnology” of the National Academy of Sciences of the Republic of Armenia. Having obtained his academic degrees from Yerevan State University (Armenia), he has been working for the Institute of Biotechnology first as a researcher, head of the Laboratory of Asymmetric Synthesis and since 2000 as director. At the same time he is head of the Pharmaceutical Chemistry Department of Yerevan State University (since 2003). He has authored over 250 scientific publications and has received a number of scientific awards, e.g. European R. Descartes Prize. He is a long-term editor-in-chief of the Chemical Journal of Armenia.

Peter Langer is Professor of Organic Chemistry at the University of Rostock, Germany. He studied chemistry at the University of Hannover (Germany) and at the Massachusetts Institute of Technology (USA) and obtained his Ph.D. at the University of Hannover in 1997. After postdoctoral work with Prof. Steven V. Ley (Cambridge, UK) he moved to the University of Göttingen in 1998, where he started his independent research career. He completed his habilitation in 2001 and was appointed Privatdozent. In 2002 he took a permanent position as a full professor at the University of Greifswald and two years later moved to University of Rostock. Since July 2005 he is also affiliated to the Leibniz-Institute of Catalysis e. V. at the University of Rostock as the head of the division “Organic Synthesis”. He is (co-)author of more than 450 research papers and received, amongst others, a Heisenberg-scholarship (2001) and gold medal of Yerevan State University (Armenia, 2010).
Updated with new chapters and topics, this book provides a comprehensive description of all essential topics in contemporary pharmacokinetics and pharmacodynamics. It features interactive computer simulations for students to experiment and observe PK/PD models in action, and helps students better appreciate important concepts and gain a greater understanding of the mechanism of action of drugs by reinforcing practical applications in both the book and the computer modules. There are new chapters on physiologically based pharmacokinetic models, predicting drug-drug interactions, and pharmacogenetics, plus strengthened chapters to better prepare students for more advanced applications. A companion website features interactive computer simulations.

About the Author

Sara E. Rosenbaum is Professor of Biomedical and Pharmaceutical Sciences at the University of Rhode Island, where she teaches courses in pharmacokinetics and pharmacodynamics. Her research interests concentrate on the development and application of pharmacokinetic and pharmacodynamic models to better understand the drug dose-response relationship.
Written by experts in combustion technology, this is a unique and refreshing perspective on the current biofuel discussion, presenting the latest research in this important field. The emphasis throughout this reference is on applications, industrial perspectives and economics, focusing on new classes of biofuels such as butanols, levulinates, benzenoids and others. Clearly structured, each chapter presents a new class of biofuel and discusses such topics as production pathways, fuel properties and its impact on engines. The result is a fascinating, user-oriented overview of new classes of biofuels beyond bioethanol.

**About the Author**

**Michael Boot** is part-time assistant professor in the combustion technology group of Eindhoven University of Technology, the Netherlands. He earned his MSc. and PhD. degree in mechanical engineering from the same University in 2005 and 2010, respectively. In 2009, he co-founded a University spin-off, Progression-Industry BV, to commercialize various fuel- and waste energy recovery technologies he developed during his PhD. period.
Addressing a significant need by describing the science and process involved to develop biosimilars of monoclonal antibody (mAb) drugs, this book covers all aspects of biosimilar development: preclinical, clinical, regulatory, manufacturing. It guides readers through this complex landscape with flow charts, tables, and figures that clearly illustrate processes and makes the book comprehensible and accessible. The book includes a review of FDA-approved mAb drugs as a quick reference to facts and useful information, and examines new technologies and strategies for improving biosimilar mAbs.

**About the Authors**

**Cheng Liu** is founder and CEO of Eureka Therapeutics, a biotech company dedicated to monoclonal antibody drug discovery and development for unmet medical needs and is a frequent speaker at pharmaceutical conferences.

**John Morrow, Jr.** is President and CEO of Newport Biotechnology Consultants, and has worked in academia and in the private sector.
Chirality in Supramolecular Assemblies: Causes and Consequences presents a broad overview of this important and rapidly developing interdisciplinary field. The book begins with an introduction to fundamental principles, followed by comprehensive coverage of recent developments in synthesis and applications of supramolecular chirality across inorganic, organometallic, organic and biological chemistry.

The book is divided into three sections as follows:

Fundamentals: A general treatment of the principles, including an introduction to molecular and topological chirality, the origins of homochirality, the nature and potential complexity of supramolecular assemblies, and the concept of molecular recognition.

Inorganic/Organometallic Systems: Covers the solution phase (including molecular devices and machines), the solid state (including network solids and coordination polymers), and surfaces/interfaces (including chiral separations and chiral catalysis).

Organic/biological systems: Covers six classes of compounds; cucurbiturils; cyclodextrins; calixarenes; synthetic peptides, crown ethers and cyclophanes; micelles and nanoparticles; proteins and other biological macromolecules. For each class of compound there is a discussion of molecular recognition/selective binding and catalysis.

About the Author

Emeritus Professor F. Richard Keene Adjunct Professor of Chemistry, School of Pharmacy & Molecular Sciences, James Cook University, Australia and Department of Chemistry, University of Canterbury, New Zealand). Honorary Visiting Research Fellow, School of Chemistry & Physics, University of Adelaide. Richard Keene is an acknowledged international authority on stereochemistry in coordination chemistry - and significantly, in the control of stereochemistry within polymetallic supramolecular assemblies - and has over the last decade has published widely on (i) its effect on intramolecular electron and energy transfer in such assemblies, and (ii) its influence on sequence- and structure-selectivity in the interaction of such complexes with nucleic acids, and their cytotoxicity to cancer cells and bacteria. He has over 160 publications (h-index 44), as well 6 chapters in monographs and a patent.
This book provides students and practitioners with a solid grounding in the theory of chromatography, important considerations in its application, and modern instrumentation. It highlights the primary variables that practitioners can manipulate, and how those variables influence chromatographic separations, and includes multiple figures that illustrate the application of these methods to actual, complex chemical samples. Problems are embedded throughout the chapters as well as at the end of each chapter so that students can check their understanding before continuing on to new sections, and each section includes numerous headings and subheadings, making it easy for faculty and students to refer to and use the information within each chapter selectively. The focused, concise nature of the book makes it useful for a modular approach to analytical chemistry courses.

About the Author

Mark F. Vitha, Professor at Drake University, is the series editor for The Chemical Analysis Series (Wiley) and is a co-editor of the book High Throughput Analysis for Food Safety (Wiley, 2014). He has been named as a Levitt Teacher of the Year, a Windsor Professor of Science, and a Ronald D. Troyer Research Fellow at Drake.
This practical guide presents a road map for safety assessment as an integral part of the development of new drugs and therapeutics. It helps readers solve scientific, technical, and regulatory issues in preclinical safety assessment and early clinical drug development and explains scientific and philosophical bases for evaluation of specific concerns, including local tissue tolerance, target organ toxicity and carcinogenicity, developmental toxicity, immunogenicity, and immunotoxicity. The book covers the development of new small and large molecules, generics, 505(b)(2) route NDAs, and biosimilars and revises material to reflect new drug products (small synthetic, large proteins and cells, and tissues), harmonized global and national regulations, and new technologies for safety evaluation. Almost 20% of content is new to this edition.

About the Author

Shayne Cox Gad, has more than 39 years’ experience in regulatory toxicology, drug and device development, statistics, and risk assessment. He is Principal of Gad Consulting Services and Past President of the American College of Toxicology (ACT), the Roundtable of Toxicology Consultants, and three of the Society of Toxicology’s specialty sections.
With this accessible book, the reader can get acquainted with AutoIt, a scripting language for the Microsoft Windows operating system, in the context of laboratory automation. Step-by-step protocols and numerous proposed exercises are the key here for learning by doing. This practical approach closes the gap between general and programming books about AutoIt, and books about laboratory automation. After an introduction to scripting using AutoIt, the most important functions are explained. On a supplementary website, two simple softwares are provided which will help readers, even those without prior knowledge the application of AutoIt. There are many exercises throughout the book following the philosophy of “learning by doing”, and real-world examples are given to illustrate applications of the technique.

About the Author

Matheus C Carvalho is Senior Research Associate at the Centre for Coastal Biogeochemistry Research, Southern Cross University, Australia. He obtained his PhD in fishery sciences from Kisato University, Japan, in 2006. His main research interests encompass the stable isotope composition of carbon in marine plants during photosynthesis and respiration, and the development of customized, automated analytical approaches.
Engineered Nanoparticles and the Environment
Biophysicochemical Processes and Toxicity
Baoshan Xing, Chad D. Vecitis & Nicola Senesi
University di Bari, Italy

Series: Wiley Series Sponsored by IUPAC in Biophysico-Chemical Processes in Environmental Systems

This book details the source, release, exposure, adsorption, aggregation, bioavailability, transport, transformation, and modeling of engineered nanoparticles found in many common products and applications. It covers synthesis, environmental application, detection, and characterization of engineered nanoparticles, and details. The toxicity and risk assessment of engineered nanoparticles. Written by world-leading experts from prestigious universities and companies, it includes topics on the transport, transformation, and modeling of engineered nanoparticles, and presents the latest developments and knowledge of engineered nanoparticles.

About the Authors
Baoshan Xing is Professor of Environmental and Soil Chemistry in Stockbridge School of Agriculture, University of Massachusetts Amherst.
Chad Vecitis is an Associate Professor of Environmental Engineering at Harvard University.
Nicola Senesi is Professor Emeritus of Soil Chemistry, University of Bari, Italy.
This book examines in a pedagogical way all pertinent molecular and macroscopic processes that govern the distribution and fate of organic chemicals in the environment and provides simple modeling tools to quantitatively describe these processes and their interplay in a given environmental system. It treats fundamental aspects of chemistry, physics, and mathematical modeling as applied to environmentally relevant problems, and gives a state of the art account of the field, and teaches the reader how to relate the structure of a given chemical to its physical chemical properties and intrinsic reactivities. Includes a large number of questions and problems allowing teachers to explore the depth of understanding of their students or allowing individuals who use the book for self-study to check their progress. There is also a companion website which includes solutions for all problems as well as a large compilation of physical constants and compound properties.

About the Authors

Rene P. Schwarzenbach is a Professor emeritus of Environmental Chemistry at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland.

Philip M. Gschwend is Full Professor of Civil and Environmental Engineering at the Massachusetts Institute of Technology.

Dieter M. Imboden is a Professor emeritus of Environmental Physics at the Swiss Federal Institute of Technology (ETH) in Zurich.
Experimental Electrochemistry  
A Laboratory Textbook, 2nd Edition  
Rudolf Holze

ISBN: 978-3-527-33524-4 | AUG 2016 | 332PP

Showing how to apply the theoretical knowledge in practice, the one and only compilation of electrochemical experiments on the market now in a new edition. Maintaining its didactic approach, this successful textbook provides clear and easy-to-follow instructions for carrying out the experiments, illustrating the most important principles and applications in modern electrochemistry, while pointing out the potential dangers and risks involved.

This second edition contains approximately 25% new material and 20 new experiments, many of which cover electrochemical energy conversion and storage as well as electrochemical equilibrium. With a foreword by R. Daniel Little.

About the Author  
Rudolf Holze is Professor of Physical Chemistry and Electrochemistry at the Institute of Chemistry at Chemnitz University of Technology. He has published several books and more than 280 research papers and reviews. In editorial boards of various journals and as editor he is actively involved in scientific communication, including the organization of conferences and workshops.
This book is a comprehensive and concise review of principles, strategies, and crucial advances in glycochemistry. It focuses on synthesis and practical applications and emphasizes state-of-the-art approaches to the assembly and design of sugars, and provides detailed discussion on specific topics like oligosaccharide assembly and design of sugars, techniques in glycoconjugate preparation, multivalency, and carbohydrate-based drug design. The book uses notable examples, like solution-based one-pot methods and automated methods for sugar assembly, to illustrate important concepts and advances in a rapidly emerging field, and it discusses practical applications of carbohydrates, like medicine, therapeutics, drug and vaccine development.

About the Authors

Shang-Cheng Hung is a Distinguished Research Fellow of the Genomics Research Center, Academia Sinica.

Medel Manuel L. Zulueta is a carbohydrate chemist at the Genomics Research Center, Academia Sinica, Taiwan.
This is the first comprehensive volume to systematically describe all the fundamental aspects and applications of graphene oxide (GO). The book is designed as tutorial for the field, so the content of each chapter progresses smoothly from basic concepts to more complex topics. Each chapter first introduces the topic, providing a basic understanding of the main concepts, and then proceeds to review and summarize the recent advances in the field. When introducing particular applications, the authors explain why GO can improve or enable them, state-of-the-art examples are given and the open tasks and future challenges for each of the application areas are discussed.

The misuse of the term graphene toward graphene oxide or reduced graphene oxide is one of the confusing issues in the modern literature and creates significant confusion among a non-expert readership. The editors address this, clearly differentiating between the two by drawing a clear borderline between graphene and reduced GO, and by showing where they are similar, and where they are different.

About the Authors

Dr. Ayrat M. Dimiev, works at EMD Performance Materials, a business of Merck KGaA, in Darmstadt, Germany.

Dr. Siegfried Eigler is in the Department of Chemistry and Chemical Engineering, Chalmers University of Technology, Goteborg, Sweden.
Following its well-received predecessor, this book offers an essential guide to chemists for understanding fluorine in spectroscopy. With over 1000 compounds and 100 spectra, the second edition adds new data featuring fluorine effects on nitrogen NMR, chemical shifts, and coupling constants.

The book explains how to successfully incorporate fluorine into target molecules and utilize fluorine substituents to structurally characterize organic compounds. Each chapter from the first edition is expanded by additional data and updated discussion from recent findings.

“The flawless ordering of material covered in this stand-alone volume is such that information can be found very easily.” *Angewandte Chemie* review of the first edition, 2010.

**About the Author**

**William R. Dolbier, Jr.**, is the Col. Allen R. and Margaret G. Crow Professor of Chemistry at the University of Florida. Professor Dolbier was the recipient of the 2000 American Chemical Society (ACS) Award for Creative Work in Fluorine Chemistry, and is a past member of the Executive Committee of the Fluorine Division of the ACS.
This timely book focuses on the monitoring, analysis and assessment of mass populations of cyanobacteria (bluegreen algae) in natural and controlled waters, including lakes, rivers and drinking water reservoirs which are being increasingly affected by cyanobacterial mass populations (blooms) at global level.

It features a comprehensive range of up-to-date review chapters, followed by a corresponding series practical methods in a major and growing field of environmental, microbiological and ecotoxicological monitoring and analysis. The practical chapters, termed “Standard Operating Procedures” (SOPs), have undergone rigorous inter-laboratory trial and validation, and are presented in sufficient detail to enable a wide range of end-users to follow the procedures in the laboratory, in academic and government institutions and in industrial settings, including water treatment plants.

The introductory and review chapters provide up-to-date overviews plus the necessary foundation for the subsequent use of the practical chapters for monitoring, analysis and the interpretation of the results. The practical chapters contain the necessary details to enable operators to perform the monitoring and analytical procedures in the field and laboratory.

About the Authors

**Jussi Meriluoto**, Department of Biosciences / Biochemistry, Åbo Akademi University, Turku, Finland.

**Lisa Spoof**, Department of Biosciences / Biochemistry, Åbo Akademi University, Turku, Finland.

**Geoffrey A. Codd**, School of Biological and Environmental Sciences, University of Stirling, UK, and, School of Life Sciences, University of Dundee, UK.
This handbook covers the entire field of magnetic Resonance Spectroscopy (MRS), a unique method that allows the non-invasive identification, quantification and spatial mapping of metabolites in living organisms—including animal models and patients. The book is comprised of three parts: Methodology; Applications; and Reference. Methodology covers basic MRS theory, methodology for acquiring, quantifying spectra, and spatially localizing spectra, and equipment essentials, as well as vital ancillary issues such as motion suppression and physiological monitoring. Applications focuses on MRS applications, both in animal models of disease and in human studies of normal physiology and disease, including cancer, neurological disease, cardiac and muscle metabolism, and obesity. Reference include useful appendices and look-up tables of relative MRS signal-to-noise ratios, typical tissue concentrations, structures of common metabolites, and useful formulae.

About the Authors

Paul A. Bottomley, Russell H Morgan Professor and Director of the Division of MR Research, of the Russell H Morgan Department of Radiology and Radiological Sciences, Johns Hopkins University. Bottomly has over 40 issued patents, 180 peer-reviewed papers, 24 book chapters, 13 editorials, and more than 225 published abstracts.

John Griffiths has published more than 300 peer-reviewed articles to date.
Of the myriad heterocycles known to man, the indole ring stands foremost for its remarkably versatile chemistry, its enormous range of biological activities, and its ubiquity in the terrestrial and marine environments. The indole ring continues to be discovered in natural products and to be employed in man-made pharmaceuticals and other materials. Given the enormous resurgence in indole ring synthesis over the past decade (highlighted by the power of transition metal catalysis) this authoritative guide addresses the need for a comprehensive presentation of the myriad of methods for constructing the indole ring, from the ancient to the modern, and from the obscure to the well-known. Following presentation of the classic indole ring syntheses and many newer methods, coverage continues with indole ring syntheses via pyrroles, indolines, oxindoles, isatins, radical and photochemical reactions, aryne cycloadditions. This extensive volume concludes with the modern transition metal-catalyzed indole ring syntheses that utilize copper, palladium, rhodium, gold, ruthenium, platinum, and other metals to fashion the indole ring.

*Indole Ring Synthesis* is a comprehensive, authoritative and up-to-date guide to the synthesis of this important heterocycle for organic chemists, pharmaceutical researchers and those interested in the chemistry of natural products.

**About the Author**

**Professor Gordon Gribble** Department of Chemistry, Dartmouth College, USA. Professor Gribble has been the co-editor of the annual book series *Progress in Heterocyclic Chemistry* for the past 10 years.
The application of knowledge of drug disposition, and skills in pharmacokinetics, are crucial to the development of new drugs and to a better understanding of how to achieve maximum benefit from existing ones. This book takes the reader from basic concepts to a point where those who wish to will be able to perform pharmacokinetic calculations and be ready to read more advanced texts and research papers. It is useful for students of medicine, pharmacy, pharmacology, biomedical sciences and veterinary science, including those who have elected to study the topic in more detail, as well as for those involved in drug discovery and development, pharmaceutical and medicinal chemists, and budding toxicologists and forensic scientists who require the appropriate knowledge to interpret their findings. There are full colour illustrations and a companion website with supporting material for course leaders and students.

About the Authors

Stephen H Curry is CEO of ADispell and currently works in the field of technology transfer and translational science with early stage companies based on discoveries at The University of Rochester and Cornell University.

Robin Whelpton’s last post before retiring was Senior Lecturer in Pharmaceutical Chemistry in the School of Biological and Chemical Sciences, Queen Mary University.
This book presents key concepts and terminology for a multidisciplinary range of topics in petroleum engineering. It places oil and gas production in the global energy context, and introduces all of the key concepts from exploration to abandonment. The book fully reviews fundamental terminology and concepts from geology, geophysics, petrophysics, drilling, production and reservoir engineering, and includes many worked practical examples within each chapter plus exercises at the chapter-ends to reinforce learning. Includes a solutions manual for academic adopters.

About the Authors

**John R. Fanchi** holds the Ross B. Matthews Chair of Petroleum Engineering at Texas Christian University in Fort Worth, Texas. He is a Distinguished Member of the Society of Petroleum Engineers.

**Richard L. Christiansen** has taught Petroleum Engineering at the University of Utah and Colorado School of Mines. He has broad industrial experience as a petroleum engineer in independent and major oil and gas companies.
This book describes self-assembly techniques in the synthesis of biomolecules for developing new compounds and improving functionality of existing ones. Because self-assembly emulates how nature creates molecules, they likely have the best chance at succeeding in real-world biomedical applications.

- Employs synthetic chemistry, physical chemistry, and materials science principles and techniques
- Emphasizes self-assembly in solutions (particularly, aqueous solutions) and at solid-liquid interfaces
- Describes polymer assembly driven by multitude interactions, including solvophobic, electrostatic, and obligatory co-assembly
- Reviews principles of cross-scale hierarchical assembly
- Illustrates assembly of bio-hybrid macromolecules and applications in biomedical engineering

About the Authors

Laurent Billon is research director the Interdisciplinary Institute of Environmental and Material Research (IPREM) in Pau, France. He is the author of over 150 scientific publications and has received the Friedrich Wilhelm Bessel Research Award (2004) from the Alexander von Humboldt Foundation. He graduated from Department of Chemistry of University of Bordeaux and in 1996 he has received his PhD in Polymer Chemistry from Pau University (France). After two postdoc positions at Rhone-Poulenc and ARKEMA (USA), he joined Pau University as Associate Professor. In 2010, he was promoted Full Professor and Deputy Director of the Interdisciplinary Institute of Environmental and Material Research (IPREM, Pau). Billon is author of over 80 scientific papers and 5 patents.

Oleg Borisov is research director at the Institute of Environmental and Material Research at Pau University, France. He graduated from Department of Physics and Mechanics of Leningrad Polytechnical Institute and received his PhD in physics and mechanics of polymers in the Institute of Macromolecular Compounds of the Russian Academy of Sciences. He is the author of over 150 papers.
A reference on drug metabolism and metabolite safety in the development phase, this book reviews the analytical techniques and experimental designs critical for metabolite studies. It features case studies of lessons learned and real world examples, along with regulatory perspectives from the US FDA and EMA.

- Reviews the analytical techniques and experimental designs critical for metabolite studies
- Covers methods including chirality, species differences, mass spectrometry, radiolabels, and in vitro / in vivo correlation
- Discusses target pharmacology, in vitro systems aligned to toxicity tests, and drug-drug interactions
- Includes perspectives from authors with firsthand involvement in industry and the study of drug metabolites, including viewpoints that have influenced regulatory guidelines

**About the Authors**

**Suzanne L. Iverson** is Head of Operations of the Department of Medical Physics and Technology at Sahlgrenska University Hospital. Previously, she was Senior Regulatory Toxicologist at AstraZeneca and has over 13 years experience in the pharmaceutical industry. Since 2011, she has served on the management committee of the European Drug Metabolism Discussion Group and the Board of the PK-Metabolism sub-committee of the Swedish Pharmaceutical Society.

**Dennis A. Smith** currently holds part-time advisory and academic positions and, previously, worked in the pharmaceutical industry for 32 years. He has co-authored over 150 publications; and his books include 3 editions of the book *Pharmacokinetics and Metabolism in Drug Design* and *Reactive Drug Metabolites*, which are published by Wiley.
The aim of this book is to improve awareness of the increasingly important role metals play in our high-tech society, the need to conserve our metal supply throughout the metal life cycle through application of green chemistry principles, the importance of improved metal recycling, and the dire effects that unhindered metal loss can have on the environment and on human health. The material presented will be useful to scientists, engineers, and other researchers in the field; policy makers as they consider alternatives; companies as they make key decisions that impact how metals are used and how products and processes can be optimized to enhance recycling, and the press/media as they communicate with the public.

About the Author

Dr. Reed M. Izatt, Charles E. Maw Professor of Chemistry (Emeritus), Brigham, Young University, U.S.A. He is the author or co-author of over 550 publications and has presented plenary, invited, and regular lectures on the subject of selective metal separations at universities worldwide; regional, national, and international chemistry conferences; and government laboratories.
The first book to aid in the understanding of the subject *Multiconfigurational Quantum Chemistry* demystifies a subject that has historically been considered difficult to learn. Accessible to any reader with a background in quantum mechanics and quantum chemistry, the book contains illustrative examples showing how these methods can be used in various areas of chemistry, such as chemical reactions in ground and excited states, transition metal and other heavy element systems. The authors detail the drawbacks and limitations of DFT and coupled-cluster based methods and offer alternative, wavefunction-based methods more suitable for smaller molecules.

**About the Author**

*Björn O. Roos* received his PhD in Theoretical Physics and is Professor Emeritus at Lund University. He is a former board member of the Swedish National Research Foundation, a member of the Swedish Royal Academy of Sciences, the Nobel Committee for Chemistry, the International Academy of Quantum Molecular Sciences, and is on the advisory editorial board for *Chemical Physics Letter, Molecular Physics, International Journal of Quantum Chemistry,* and *Chemical Physics Physical Chemistry*. Dr. Roos is the author of approximately 300 peer-reviewed articles in international journals, various book chapters, and is editor and co-author of text books for the European Summer School in Quantum Chemistry.
Written by renowned experts in the field, this is the first book to reflect the state of the art of nanocatalysis in ionic liquids. Equally divided into two core areas, the first part of the book describes the different classes of metal nanoparticles as well as their synthesis in ionic liquids, while the second focuses on such emerging issues as the application of such systems to energy and biomass conversion and gas-to-liquid / liquid-to-gas processes.

**About the Author**

**Martin Prechtl**, University of Cologne, Germany. As Feodor-Lynen-Fellow of the Alexander-von-Humboldt-Foundation he performed research with Humboldt Laureate Jairton Dupont at the Federal University of Rio Grande do Sul (UFRGS) in Porto Alegre, Brazil in the field of nanoscale catalysts in multiphase systems.
Operational Safety Economics
A practical approach focused on the Chemical and Process Industries
Genserik L. L. Reniers
Universiteit Antwerpen, Belgium

ISBN: 978-1-118-87112-6 | OCT 2016 | 344PP

- Describes how to make economic decisions regarding safety in the chemical and process industries
  - Covers both technical risk assessment and economic aspects of safety decision-making
  - Suitable for both academic researchers and practitioners in industry
  - Addresses cost-benefit analysis for safety investments

About the Author
Genserik Reniers is Professor at the TU Delft (Safety Science Group, Faculty of Technology, Policy and Management, The Netherlands), Professor at the HUB campus of the KULeuven (CEDON, Faculty of Economics and Management, Belgium) and at the University of Antwerp (ARGoSS, Faculty of Applied Economic Sciences, Belgium). He received his PhD in Applied Economic Sciences from the University of Antwerp, after completing a Master’s degree in Chemical Engineering at the Vrije Universiteit Brussels. His main research interests concern the collaboration and interaction between safety and security topics and socioeconomic optimization within the chemical industry. Genserik has authored, co-authored, edited or co-edited more than 20 books in the field of safety and/or security in the process industries, and he is Receiving Editor for the Journal of Loss Prevention in the Process Industries (JLPPI), and Associate Editor of Safety Science, two very well-known academic journals in the research field. He has taught safety and security economics (as part of larger courses) since 2006 both at the University of Antwerp and at the HUB-campus of the KULeuven.
Retaining the successful previous edition’s programmed instructional format, this book improves and updates an authoritative textbook to keep pace with compounding trends and calculations, addressing real-world calculations pharmacists perform and allowing students to learn at their own pace through examples. This edition features a new chapter dedicated to practical calculations used in contemporary compounding, new appendices, and solutions and answers for all problems, and a rearranged chapter structure with some topics rewritten. It is valuable for teaching pharmacy students the principles while also serving as a reference for review by students in preparation for licensure exams, and can be used as the primary textbook in a typical dosage calculations course for any health care professional.

About the Authors

Maria Glauca Teixeira is Associate Professor Emeritus in the School of Pharmacy at the University of Wyoming, and was previously Professor at the Federal University of Ceará in Fortaleza, Brazil. She has received numerous recognitions for her teaching.

Joel L. Zatz, PhD, is Professor Emeritus at Rutgers University, New Jersey.
This is a modern and accessible undergraduate textbook which takes a fresh approach to teaching in physical chemistry, to prepare students for how they will actually employ physical chemistry in real life. Designed to excite and engage all students of chemistry, the pedagogical style and practical, contemporary examples allows them to remember more of physical chemistry, not just that it was the hardest course they ever took! For students who are not planning to specialize in physical chemistry, this text presents the mathematical and physical machinery to facilitate an understanding of the physical chemical aspects of any system, allowing students of inorganic, organic, analytical and biochemistry to be fluent in the required essentials of physical chemistry. For students who are deeply interested in the subject of physical chemistry, the textbook facilitates further study by connecting them to the frontiers of research. For each chapter there are worked examples, discussion questions, simple equation manipulation questions and problem-solving exercises, and there is an online solutions manual for instructors.

About the Author

Professor Kurt W. Kolasinski, West Chester University, Pennsylvania, USA. He is the author of over 90 scholarly publications as well as the widely used textbook *Surface Science: Foundations of Catalysis and Nanoscience*, which appeared in its third edition in 2012.
This book encompasses topics from the fundamentals of disease related protein misfolding and mass spectrometry, to current research highlights in these areas. It is aimed to provide an overview of this rapidly developing field in order to present a good mixture of information that will encourage people to participate in, and further the use of mass spectrometry in studying protein misfolding with biologically relevant applications. Using examples from the current literature, the book focuses on details relating to understanding the fundamentals of disease related protein misfolding, conducting and optimising the mass spectrometry experiment, and also future prospects of methodologies within this rapidly evolving and topical research area.

About the Author
Tara Pukala is currently a Senior Lecturer in Chemistry at the University of Adelaide where she leads a research group focussed on innovative research in protein chemistry and structural biology. She has published many peer-reviewed articles in the area of protein misfolding, and has delivered many presentations as invited speaker at universities, conferences, national laboratories and institutes.
Providing vital knowledge on the design and synthesis of specific metal-organic framework (MOF) classes as well as their properties, this ready reference summarizes the state of the art in chemistry. Divided into four parts, the first begins with a basic introduction to typical cluster units or coordination geometries and provides examples of recent and advanced MOF structures and applications typical for the respective class. Part II covers recent progress in linker chemistries, while special MOF classes and morphology design are described in Part III. The fourth part deals with advanced characterization techniques, such as NMR, in situ studies, and modeling. A final unique feature is the inclusion of data sheets of commercially available MOFs in the appendix, enabling experts and newcomers to the field to select the appropriate MOF for a desired application.

A must-have reference for chemists, materials scientists, and engineers in academia and industry working in the field of catalysis, gas and water purification, energy storage, separation, and sensors.

About the Author

Stefan Kaskel is the Head of the Inorganic Chemistry Department at Technical University Dresden, Germany, and Head of the Business Unit Chemical Surface and Reaction Technology at Fraunhofer Institute for Material and Beam Technology (IWS) in Dresden. He has authored more than 250 scientific publications and more than 40 patents.
This book gradually brings the reader, through illustrations of the most crucial discoveries, into the modern world of chemical catalysis. Readers and experts will better understand the enormous influence that catalysis has given to the development of modern societies. The book highlights the field’s onset up to its modern days, covering the life and achievements of luminaries of the catalytic era, and while it appeals to general audience in interpretation and analysis, it preserves the precision and clarity of a scientific approach. Fills the gap in publications that cover the history of specific catalytic processes.

About the Authors

**Adriano Zecchina** is Professor Emeritus of the University of Turin. He is a member of the Ownership board of PCCP (Physical Chemistry and Chemical Physics) of the Turin Academy of Sciences, the National Academy of Lincei, and Europaea Academy.

**Salvatore Califano** is the director of the European Laboratory of Molecular Spectroscopy in Florence, Italy.
This is the first scientific book devoted to the Pauli Exclusion Principle, which is a fundamental principle of quantum mechanics and is permanently applied in chemistry, physics, molecular biology and in physical astronomy. While the principle has been studied for more than 90 years, rigorous theoretical foundations still have not been established and many unsolved problems remain. Following an introduction and historical survey, this book discusses the still unresolved questions around this fundamental principle. With detailed appendices, *The Pauli Exclusion Principle* is a self-sufficient guide for graduate students and academic researchers in the fields of quantum mechanics, theoretical chemistry, physics, and applied mathematics. It is a valuable resource for any reader interested in the foundations of quantum mechanics and its applications in areas such as atomic and molecular spectroscopy, spintronics, molecular biology, and applied fields of quantum information.

**About the Author**

**Ilya G. Kaplan**, Head of Department, Materials Research Institute, National Autonomous University of Mexico. Kaplan has published 4 books in Russian, 4 books in English, including the Wiley title *Intermolecular Interactions*, and 11 book chapters, one of which was devoted to the Pauli Exclusion Principle. He was also an Associate Editor for Wiley's *Handbook of Molecular Physics and Quantum Chemistry*. 

To request review copies translationrights@wiley.com
In light of the growing interest in design and synthesis of building blocks for the self-assembly of complex structures, this book addresses the field of self-assembly from a theoretical perspective, highlighting the importance of computational studies to support the design of new self-assembling materials with useful structural, mechanical and electrical properties. The book investigates concepts, theoretical methods, and state-of-the-art computational tools and techniques for the simulation of self-assembling systems.

Theoretical studies and simulation methods are essential to realize the targeted ordered structures from designed building blocks, but information on these studies is extremely difficult and time-consuming to find in the current literature. Written by specialists in various disciplines, such as polymers, soft matter, nanoparticle self-assembly and biophysics, this book is the very first to provide comprehensive knowledge in this emerging and important field. It will be a must-have for anyone working in fields related to self-assembling systems, both theoretically and experimentally.

About the Author

Professor Li-Tang Yan, Tsinghua University, China. Professor Yan has published more than 60 papers in peer-reviewed journals such as *Nano Letters*, *ACS Nano*, *Biomaterials*, *Scientific Reports*, *JPC Lett*, *Nanoscale*, covering some important directions in the field of self-assembling systems. In 2014 he received an Excellent Young Investigator Award from NSFC (Natural Science Foundation of China).
The first book applying HBFEM to practical electronic nonlinear field and circuit problems

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About the Authors

Junwei Lu, Professor, Griffith School of Engineering, Griffith University, Australia. Professor Lu has developed Harmonic Balance FEM techniques for nonlinear magnetics and Time Domain FEM techniques for wave propagation problems, and has been working in this area since 1985.

Xiaojun Zhao is researcher at the State Key Laboratory of Alternate Electrical Power System with Renewable Energy Source, North China Electric Power University, China.

Sotoshi Yamada has been Professor at Laboratory of Magnetic Field Control and Applications since 1992 and is engaged in research on power magnetic devices, the numerical electromagnetic field calculation, and biomagnetics.
Impedance Source Power Electronic Converters brings together state-of-the-art knowledge and cutting-edge techniques in various stages of research related to the ever more popular impedance source converters/inverters. Highly accessible, this is an invaluable resource for researchers, postgraduate/graduate students studying power electronics and its application in industry and renewable energy conversion as well as practising R&D engineers. Readers will be able to apply the presented material for the future design of the next generation of efficient power electronic converters/inverters.

About the Authors

Dr Yushan Liu is currently Postdoctoral Research Associate in the Department of Electrical and Computer Engineering, Texas A&M University at Qatar.

Dr Abu-Rub is an Associate Professor at Texas A&M University at Qatar. He is the first author of three books, co-author of five book chapters, an active IEEE member and an editor of three IEEE Transactions.

Dr Baoming Ge is currently working simultaneously at Texas A&M University, USA, and at Beijing Jiaotong University. Dr Ge has published more than 150 Journal and Conference papers, a book and two book chapters, holds seven patents and is an active IEEE member.

Dr Frede Blaabjerg is a Professor of Power Electronics and Drives and has published approximately 300 journal papers, served as Editor-in-Chief of the IEEE Transactions on Power Electronics, and has won numerous prestigious awards for his work in power electronics.

Dr Omar Ellabban is Assistant Research Scientist at Texas A&M University at Qatar.
Optimization and Business Improvement Studies in Upstream Oil and Gas Industry
Sanjib Chowdhury

Series: Wiley Series on Oil and Gas Technology

Optimization and Business Improvement Studies in Upstream Oil and Gas Industry contains eleven real-life optimization and business improvement studies that delve into the core exploration and production activities and functional areas covering a wide range of operations and processes. It uses various quantitative and qualitative techniques, such as Linear Programming, Queuing theory, Critical Path Analysis, Economic analysis, Best Practices Benchmark, Business Process Simplification etc. to optimize.

The book will be of immense interest to practicing managers, professionals and employees at all levels/disciplines in oil and gas industry. It will also be useful to academicians, scholars, educational institutes, energy research institutes, and consultants dealing with oil and gas. The work can be used as a practical guide to upstream professionals and students in petroleum engineering programs.

About the Author
Sanjib Chowdhury is working in a major oil company and has over thirty years of experience in cross-functional areas of Strategic and Corporate Planning, Optimization and Business Improvement, HR and General Management in Upstream sector. He has held responsible positions and carried out many impressive work and studies in these areas - this book is a testimony of that. He holds B.Tech, M.Tech., and Ph.D. degrees in Industrial Engineering & Management all from Indian Institute of Technology, Kharagpur, and published several technical papers in journals of repute.
Covering the latest practices, challenges and theoretical advancements in the domain of balancing economic efficiency and operation risk mitigation, this book examines both system operation and market operation perspectives, focusing on the interaction between the two. It incorporates up-to-date field experiences, presents challenges, and summarizes the latest theoretic advancements to address those challenges. Besides the state-of-the-art review and discussion on the domain of balancing economic efficiency and operation risk mitigation, this book describes a new approach for mass market demand response management, and introduces new criteria to improve system performance with large scale variable generation additions. This is a timely reference for power engineers and researchers, electricity market traders and analysts, and market designers.

About the Author

Hong Chen is a Senior Consultant at PJM Interconnection in Pennsylvania, USA, and was a Principal Analyst in electricity market design and development at ISO New England, USA. She has more than 20 years’ experience within the power industry and is the current chair of Power System Operation, Planning and Economics committee in the Power and Energy Society of IEEE.
Through detailed case studies of the most important advanced material creations of the latter 20th and early 21st century, the author explores the role of the field of advanced materials in the technological and economic activity today, with implications to the innovation process in general. A comprehensive study that encompasses the three major categories of advanced material technologies, i.e., Structural Materials (metals and polymers), Functional Materials (transistor, microchip and semiconductor laser) and Hybrid and New Forms of Matter (liquid crystals and nanomaterials). Extensive use of primary sources, including unpublished interviews with the scientists, engineers, and entrepreneurs on the front lines of advanced materials creation are combined with an original approach to case study narrative, emphasizing interaction between the advanced material process, perceived risk and directing and accelerating breakthrough technology.

**About the Author**

**Dr. Sanford L. Moskowitz** is Associate Professor of Global Business at St. John’s University and the College of St. Benedict (Collegeville, MN). Dr. Moskowitz is a consultant to global business and has delivered key-note presentations at international academic and professional conferences. Dr. Moskowitz is the author of *The Advanced Materials Revolution* (2009 Wiley).
This concise reference summarizes the latest results in nano-structured thin films, the first to discuss both deposition methods and electronic applications in detail. Following an introduction to this rapidly developing field, the authors present a variety of organic and inorganic materials along with new deposition techniques, and conclude with an overview of applications and considerations for their technology deployment.

About the Author

Yuan Lin is a Yangtze River Scholar Chair Professor at the University of Electronic Science and Technology in Chengdu, China. She has worked in the field of thin film and nanomaterials for 20 years. Her area of expertise includes advanced material research using pulsed laser deposition, rf-sputtering and chemical-solution deposition. Dr. Lin has authored more than 90 scientific publications and 13 patents.
With its content taken from only the very latest results, this is an extensive summary of the various polymeric materials used for biomedical applications. Following an introduction listing various functional polymers, including conductive, biocompatible and conjugated polymers, the book goes on to discuss different synthetic polymers that can be used, for example, as hydrogels, biochemical sensors, functional surfaces, and natural degradable materials. Throughout, the focus is on applications, with worked examples for training purposes as well as case studies included. The whole is rounded off with a look at future trends.

About the Authors

Raju Francis is Associate Professor in Mahatma Gandhi University, Kottayam, India. 
D. Sakthi Kumar is Professor in the Bio Nano Electronics Research Center at the Toyo University in Tokyo, Japan. He has published several publications in the area of polymers and nanomaterials for biomedical applications and drug delivery.
The book discusses in a detailed manner various nanomaterials used for biomedical applications, including clinical applications, diagnosis and tissue engineering. After the presentation of an overview of biomedical nanomaterials, including their classification and applications, the first part of the book is devoted to biomedical nanomaterials for therapy applications. For example, polymer micelles, dendrimers, polymer-drug conjugates as well as antibody-drug conjugates are discussed with respect to their cancer drug delivery properties. The next parts discuss biomedical nanomaterials that are used for imaging, diagnosis and sensors, as well as for tissue engineering. In the final section, the safety of biomedical nanomaterials is elaborated.

**About the Authors**

*Yuliang Zhao* is Professor in Chemistry and Physics.

*Youqing Shen* is the Director of Center for Bionanoengineering, Department of Chemical and Biological Engineering, Zhejiang University at Hangzhou, China. He has authored more than 150 scientific publications and one book.
Written by one of the most authoritative organic chemists worldwide, this book combines techniques from nature with synthetic organic approaches to bring the best results possible. An overview of current research with a look at future industrial applications.

About the Author

Manfred Reetz is Director of the Max Planck institute in Mülheim, Germany, and one of the world’s leading top organic chemists. He has several awards and honors and is member of the Deutsche Akademie der Naturforscher Leopoldina, of the Nordrhein-Westfälische Akademie der Wissenschaften, of the Kuratorium der Alfried Kupp von Bohlen und Halbach foundation, and of the Royal Netherlands Academy of Arts and Sciences.
Filling the gap between publications for industrial developers and academic researchers on graphene synthesis and its applications, this book presents the essential aspects for the successful upscaling of graphene production. After an introduction to graphene, its synthesis and characterization, the text covers a wide variety of graphene composites and compounds. The larger part of the book discusses various applications where graphene has been successfully integrated into technologies, including uses in the energy sector, oil and gas industry, biomedical areas, sensors and coatings. Finally, the book concludes with a summary and a look at the future of graphene technology, including a market review.

With its focus on applications, this is equally useful for both academic and industrial users.

About the Authors

Soroush Nazarpour is president and chief executive officer of NanoXplore Inc., Montreal, Canada. He has authored more than sixty articles, four patents, three books and numerous industrial reports.

Stephen R. Waite is co-founder and executive director of the Graphene Stakeholders Association and an advisory board member for the NanoBusiness Commercialization Association and Strategic News Service “Future in Review” conference series. He has more than 30 years of experience in entrepreneurial and corporate settings in the field of emerging technologies (nanotechnology, biotechnology and life sciences) as well as entertainment, digital media and information security.
The results of an ambitious project, this well-structured directory of globally available software tools in ICME guides readers along the value chain in the production of components. The compilation is comprehensive in its coverage, dealing with the entire roadmap and lifecycle of components, including missing tools and functionalities. An introduction is provided for each processing step, including casting, forming, heat treatment, coating and joining, and the relevant phenomena are highlighted, discussing the current state for the different simulation tools. In particular, the discussion focuses on interfaces and data formats provided for the import and export of information. A must-have for researchers, users, and simulation software providers that equally serves as a reference manual for all types of software developers and providers, both academic and commercial.
Presents a fully interdisciplinary approach with a stronger emphasis on polymers and composites than traditional materials books

Materials science and engineering is an interdisciplinary field involving the properties of matter and its applications to various areas of science and engineering. Polymer materials are often mixed with inorganic materials to enhance their mechanical, electrical, thermal, and physical properties. *Materials: Introduction and Applications* addresses a gap in the existing textbooks on materials science.

**About the Authors**

**Witold Brostow** is Regents Professor of Materials Science and Engineering at the University of North Texas. He is President of the International Council on Materials Education and President of the Scientific Committee of the POLYCHAR World Forum on Advanced Material (42 member countries). He has three honorary doctorates and is a Member of the European Academy of Sciences, Member of the National Academy of Sciences of Mexico, Foreign Member of the National Academy of Engineering of Georgia in Tbilisi and Fellow of the Royal Society of Chemistry in London. His publications have been cited more than 7200 times.

**Haley Lobland** is the Associate Director of LAPOM at the University of North Texas. She is a Member of the POLYCHAR Scientific Committee. She has received awards for her research presented at conferences in: Buzios, Rio de Janeiro, Brazil; NIST, Frederick, Maryland; Rouen, France; and Lviv, Ukraine. She has lectured in a number of countries including Poland and Spain. Her publications include joint ones with colleagues in Egypt, Georgia, Germany, India, Israel, Mexico, Poland, Turkey and United Kingdom.
This first book on this fascinating, interdisciplinary topic meets the much-felt need for an up-to-date overview of the field. Written with both beginners and professionals in mind, this ready reference begins with an introductory section explaining the basics of the various multi-photon and photochemical processes together with a description of the equipment needed. A team of leading international experts provides the latest research results on such materials as new photoinitiators, hybrid photopolymers, and metallic carbon nanotube composites. They also cover promising applications and prospective trends, including photonic crystals, microfluidic devices, biological scaffolds, metamaterials, waveguides, and functionalized hydrogels. By bringing together the essentials for both industrial and academic researchers, this is an invaluable companion for materials scientists, polymer chemists, surface chemists, surface physicists, biophysicists, and medical scientists working with 3D micro and nanostructures.

**About the Authors**

**Jürgen Stampfl** is Head of the working group Functional Non-Metals at the Institute of Materials Science and Technology at the Vienna University of Technology.

**Robert Liska** is leader of the research group Photopolymerization at the Institute of Applied Synthetic Chemistry at the Vienna University of Technology and head of the Christian Doppler Laboratory for photopolymers in digital and restorative dentistry.

**Alexander Ovsianikov**, Vienna University of Technology, has contributed to over 45 publications.
This book assembles scientists working on the hybridization of nanomolecules who generate new materials with superior, enabling properties that each molecule does not have on its own. Special emphasis is placed on the new directions and developments in design and applications of new materials incorporating organic/inorganic, polymer, biopolymers, metallic, and nanoarchitecture approaches. Specific Topics include: Hybrids of carbon nanotubes and metal nanoparticles; semiconductor polymer/biopolymer hybrids, metal biopolymer hybrids, bioorganic/inorganic hybrids, hybrid nanomaterial for surface energy transfer, fullerene metal/semiconductor hybrids, hybrid material main group elements, hybrid phase catalysts, nano silicone/silica colloidal hybrids, nanoarchitectures of DNA hybrids, and enzyme-based hybrid materials.

About the Author

Bhanu P. S. Chauhan is Professor and Chairperson of the Chemistry Department at William Paterson University of New Jersey. Professor Chauhan serves as editorial board or advisory board member of seven journals including Applied Organometallic Chemistry (Wiley) and Silicon (Springer). He has various patents and numerous peer reviewed publications.
Summarizing all the latest trends and recent topics in one handy volume, this book covers everything needed for a solid understanding of photochromic materials. Following a general introduction to organic photochromic materials, the authors move on to discuss not only the underlying theory but also the properties of such materials. After a selection of applications, they look at the latest achievements in traditional solution-phase applications, including photochromic-based molecular logic operations and memory, optically modulated supramolecular system and sensors, as well as light-tunable chemical reactions. The book then describes the hot-spot areas of photo-switchable surfaces and nanomaterials, photochromic-based luminescence/electronic devices and bulk materials together with light-regulated biological and bio-chemical systems. The authors conclude with a focus on current industrial applications and the future outlook for these materials. Written with both senior researchers and entrants to the field in mind.

About the Authors
He Tian is Cheung Kong Distinguished Professor and a member of the Chinese Academy of Science.

Junji Zhang is a lecturer, and his research interests are mainly focused on the photochromic materials, supramolecular switches and nanopore single-molecule sensing.
Scrutinizing various fillers, such as fly ash, inorganic nanoparticles, Kevlar and wood flour, this book exemplifies how the choice of filler influences the micro- and macroscopic behavior of the resulting polymer composites, such as friction, wear and impact resistance. In so doing, the text brings together a number of composite systems using different polymer matrices, different filler systems as well as different processing conditions, thereby serving as a beneficial guide for readers so as to select a particular set of processing conditions or composite constituents for the enhancement of certain properties.

**About the Author**

**Vikas Mittal** is an Assistant Professor at the Chemical Engineering Department of The Petroleum Institute, Abu Dhabi. He has authored over 40 scientific publications, book chapters and patents.
A concise and practical overview of the most important modern synthetic aspects of conjugated polymers and carbon materials, including their properties and applications.

Clearly structured, this book summarizes recent achievements and reviews research trends, and includes discussion of a wide variety of polymerization techniques on both a strategic as well as a practical level, including Grignard, Stille and Suzuki polymerizations. It covers various carbon-rich materials, such as graphene and carbon nanotubes, and looks at how the different synthetic pathways and strategies influence their final properties, for example, for use in organic electronic devices. The whole is rounded off with a discussion of future technology advances. An essential reference for newcomers as well as experienced researchers in the field.

About the Authors

**Mario Leclerc**, Université Laval, Canada Research Chair on Electroactive and Photoactive Polymers. Prof. Leclerc has authored more than 250 scientific publications and 10 book chapters and has 10 patents.

**Jean-François Morin**, Assistant Professor, Department of Chemistry, Université Laval, has authored more than 50 scientific publications and several book chapters and has 4 patents.
This book provides the reader with a comprehensive view of analytical methods for nanotoxicology studies. After an introduction to nanomaterials and toxicological studies, the book discusses various characterization methods of nanomaterials and continues with the detection of nanoparticles in vivo as well as in vitro. A variety of techniques in molecular toxicology of nanomaterials is presented, followed by a detailed explanation of interaction between nanoparticles and biomacromolecules, including the structure-toxicity relationships of nanomaterials. Finally, the book concludes with the advantages and challenges of the analytical methods for nanotoxicology.

About the Authors

**Zhiyong Zhang** is a professor and a scientific leader in environment health and safety at the Chinese Academy of Sciences in the Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety.

**Weiyue Feng** is Professor of Inorganic Chemistry and Biological Chemistry.

**Yuliang Zhao** is Professor in Chemistry and Physics.
This book is a stimulating panoramic tour - quite different from a textbook journey - of the world of statistics in both its theory and practice, for teachers, students and practitioners. At each stop on the tour, the authors investigate unusual and quirky aspects of statistics, highlighting historical, biographical and philosophical dimensions of this field of knowledge. Each chapter opens with perspectives on its theme, often from several points of view. Five original and thought-provoking questions follow. These aim at widening readers knowledge and deepening their insight. Scattered among the questions are entertaining puzzles to solve and tantalising paradoxes to explain. Readers can compare their own statistical discoveries with the authors detailed answers to all the questions. An enjoyable companion to an undergraduate statistics textbook, and an enriching source of knowledge for statistics teachers and practitioners.

About the Author

**Eric Sowey**, School of Economics, The University of New South Wales, Sydney, Australia.
Advances in DEA Theory and Applications provides a necessary framework for assessing the performance of competing entities including forecasting models and enables the reader to choose the most appropriate methodology and make the right implementation decisions. This book provides an account of the latest advances in DEA theory and applications to the field of forecasting.

About the Author

Kaoru Tone, National Graduate Institute for Policy Studies, Japan, is the author of the classic book Data Envelopment Analysis and has published many papers on DEA in numerous international journals. His Slacks-based Measure (SBM) is utilized all over the world. He is Editorial Board member of Omega, The Journal of Data Envelopment Analysis, Socio-Economic Planning Sciences, Journal of Optimization Theory and Applications, and Metamorphosis.
Geographical systems are characterised by locations, activities at locations, interactions between them and the infrastructures that carry these activities and flows. They can be described at a great variety of scales, from individuals and organisations to countries. Our understanding, often partial, of these entities, and in many cases this understanding is represented in theories and associated mathematical models. In this book, the main examples are models that represent elements of the global system covering such topics as trade, migration, security and development aid together with examples at finer scales. This provides an effective toolkit that can not only be applied to global systems, but more widely in the modelling of complex systems. This book is for practitioners and researchers in applied mathematics, geography, economics, and interdisciplinary fields such as regional science and complexity science. It can also be used as the basis of a modelling course for postgraduate students.

About the Author

Alan Geoffrey Wilson, Centre for Advanced Spatial Analysis, University College London, UK has been responsible for the introduction of a number of model building techniques which are now in common use internationally in areas such as transport planning. He has made important contributions through the rigorous deployment of accounts’ concepts in demography and economic modelling.
This new title in the well-established “Quantitative Network Biology” series includes innovative and existing methods for analyzing network data in such areas as network biology and chemoinformatics.

With its easy-to-follow introduction to the theoretical background and application-oriented chapters, the book demonstrates that R is a powerful language for statistically analyzing networks and for solving such large-scale phenomena as network sampling and bootstrapping. Written by editors and authors with an excellent track record in the field, this is the ultimate reference for R in Network Analysis.

About the Authors

**Matthias Dehmer** studied mathematics at the University of Siegen (Germany) and received his Ph.D. in computer science from the Technical University of Darmstadt (Germany). Afterwards, he was a research fellow at Vienna Bio Center (Austria), Vienna University of Technology, and University of Coimbra (Portugal). He obtained his habilitation in applied discrete mathematics from the Vienna University of Technology. Currently, he is Professor at UMIT - The Health and Life Sciences University (Austria) and also holds a position at the Universität der Bundeswehr München. His research interests are in applied mathematics, bioinformatics, systems biology, graph theory, complexity and information theory. He has written over 180 publications in his research areas.

**Yongtang Shi** studied mathematics at Northwest University (Xi'an, China) and received his Ph.D in applied mathematics from Nankai University (Tianjin, China). He visited Technische Universität Bergakademie Freiberg (Germany), UMIT (Austria) and Simon Fraser University (Canada). Currently, he is an associate professor at the Center for Combinatorics of Nankai University. His research interests are in graph theory and its applications, especially the applications of graph theory in mathematical chemistry, computer science and information theory. He has written over 40 publications in graph theory and its applications.

**Frank Emmert-Streib** studied physics at the University of Siegen (Germany) gaining his PhD in theoretical physics from the University of Bremen (Germany). He received postdoctoral training from the Stowers Institute for Medical Research (Kansas City, USA) and the University of Washington (Seattle, USA). Currently, he is associate professor for Computational Biology at Tampere University of Technology (Finland). His main research interests are in the field of computational medicine, network biology and statistical genomics.
For ethical reasons, it is vital to keep the number of patients in a clinical trial as low as possible. As evidenced by extensive research publications, crossover design can be a useful and powerful tool to reduce the number of patients needed for a parallel group design in studying treatments for non-curable chronic diseases. This book introduces commonly-used and well-established statistical tests and estimators in epidemiology that can easily be applied to hypothesis testing and estimation of the relative treatment effect for various types of data scale in crossover designs. The book provides clinicians and biostatisticians with the exact test procedures and exact interval estimators, which are applicable even when the number of patients in a crossover trial is small. Systematic discussion on sample size determination is also included, which is a valuable resource for researchers involved in crossover trial design. Each chapter is self-contained, allowing the book to be used as a reference resource, and it is full of real-life examples and extensive exercises.

About the Author
Kung-Jong Lui, Professor, Department of Mathematics and Statistics, San Diego State University, USA.
An introduction to differential equations, probability, and stochastic processes with real-world applications of queues with delay and delayed network queues. Featuring recent advances in queueing theory and modeling, *Delayed and Network Queues* provides the most up-to-date theories in queueing model applications, balancing both theoretical and practical applications of queueing theory, and introducing queueing network models as tools to assist in the answering of questions on cost and performance that arise throughout the life of a computer system and signal processing.

Written by well-known researchers in the field, the book presents key information for understanding the essential aspects of queues with delay and networks of queues with unreliable nodes and vacationing servers. Beginning with simple analytical fundamentals, the book contains a selection of realistic and advanced queueing models that address current deficiencies. In addition, the book presents the treatment of queues with delay and networks of queues, including possible breakdowns and disruptions that may cause delay.

**About the Authors**

**Aliakbar Montazer Haghighi**, Professor and Head of the Department of Mathematics at Prairie View A&M University, as well as founding Editor-in-Chief of the journal *Applications and Applied Mathematics*.

**Dimitar P. Mishev**, Professor, Prairie View A&M University is author of numerous research papers and three books including *Difference and Differential Equations with Applications in Queueing Theory*, also published by Wiley.
A guide to the growing importance of extreme value risk theory, methods, and applications in the financial sector

Presenting a uniquely accessible guide, *Extreme Events in Finance: A Handbook of Extreme Value Theory and its Applications* features a combination of the theory, methods, and applications of extreme value theory (EVT) in finance, as well as a practical understanding of market behavior including both ordinary and extraordinary conditions.

Beginning with a fascinating history of EVT and financial modeling, the handbook introduces the historical implications that resulted in the applications and then clearly examines the fundamental results of EVT in finance. After dealing with these theoretical results, the handbook focuses on the EVT methods critical for data analysis. Finally, the handbook features the practical applications and techniques, and how these can be implemented in financial markets.

The book is a valuable reference for practitioners in financial markets such as financial institutions, investment funds, and corporate treasuries, financial engineers, quantitative analysts, regulators, risk managers, large-scale consultancy groups, and insurers. *Extreme Events in Finance: A Handbook of Extreme Value Theory and its Applications* is also a useful textbook for postgraduate courses on the methodology of EVTs in finance.

About the Author

François Longin is Professor in the Department of Finance at ESSEC Business School, France. His research works can be found in scientific journals such as *The Journal of Finance*. Dr. Longin is currently a financial consultant with expertise covering risk management for financial institutions and portfolio management for asset management firms.
This Second Edition continues to be the largest comprehensive study in the field and reflects a user-friendly and historical approach to the myriad of properties of both Fibonacci and Lucas numbers. Fibonacci and Lucas numbers have intrigued amateurs and professionals for centuries, and this book offers analysis of these famous integers, complete with a wealth of exciting applications, enlightening examples, and fun exercises that provide numerous opportunities for exploration and experimentation. The book is easily accessible to college and even high school students, though advanced material is included to challenge more sophisticated Fibonacci enthusiasts. A historical survey of the development of Fibonacci and Lucas numbers are provided as well as biographical sketches of intriguing personalities involved in developing the subject. Illustrative examples round out the book, and most chapters conclude with numeric and theoretical exercises that do not rely on long and tedious proofs of theorems.

About the Author

Thomas Koshy is retired Professor of Mathematics at Framingham State College in Framingham, Massachusetts. The author of numerous books and approximately 150 journal articles, he is a member of the American Mathematical Society and the National Council of Teachers of Mathematics.
A must-have text for risk modelling and portfolio optimization using R.

This book introduces the latest techniques advocated for measuring financial market risk and portfolio optimization, and provides a plethora of R code examples that enable the reader to replicate the results featured throughout the book. This edition has been extensively revised to include new topics on risk surfaces and probabilistic utility optimization as well as an extended introduction to R language.

**Financial Risk Modelling and Portfolio Optimization with R:**
- Demonstrates techniques in modelling financial risks and applying portfolio optimization techniques as well as recent advances in the field
- Introduces stylized facts, loss function and risk measures, conditional and unconditional modelling of risk; extreme value theory, generalized hyperbolic distribution, volatility modelling and concepts for capturing dependencies
- Explores portfolio risk concepts and optimization with risk constraints
- Is accompanied by a supporting website featuring examples and case studies in R
- Includes updated list of R packages for enabling the reader to replicate the results in the book

Graduate and postgraduate students in finance, economics, risk management as well as practitioners in finance and portfolio optimization will find this book beneficial. It also serves well as an accompanying text in computer-lab classes and is therefore suitable for self-study.

**About the Author**

Bernhard Eugen Heinrich Pfaff, Director, Invesco Asset Management Deutschland GmbH, Germany.
Fuzzy differential equations are solved via various analytical and numerical methodologies, and this book presents their importance for problem solving, prototype engineering design, and systems testing in uncertain environments. In recent years, modeling of differential equations for arbitrary and fractional order systems has been increasing in its applicability, and the authors feature examples from a variety of disciplines to illustrate the practicality and importance of the methods within physics, applied mathematics, engineering, and chemistry, to name a few.

This book features: basic preliminaries of fuzzy set theory; coverage of a variety of fuzzy fractional differential equations including structural, diffusion, and chemical problems as well as heat equations and biomathematical applications; and discussions on how to model physical problems in terms of nonprobabilistic methods and provides systematic coverage of fuzzy fractional differential equations and its applications.

Complete with comprehensive results and solutions, this is an ideal resource for practitioners, researchers, and academicians in applied mathematics, physics, biology, engineering, computer science, and chemistry who need to model uncertain physical phenomena and problems.

About the Authors

**Snehashish Chakraverty**, Professor and Head of the Department of Mathematics, National Institute of Technology, Rourkela, India.

**Smita Tapaswini**, Assistant Professor Kalinga Institute of Industrial Technology University, India and Post-Doctoral Fellow, Chongqing University, China.

**Diptiranjan Behera**, Post-Doctoral Fellow, University of Electronic Science and Technology, China.
This book is a new edition of a title originally published in 1992. No other book has been published that treats inverse spectral and inverse scattering results by using the so called Poisson summation formula and the related study of singularities. This book presents these in a closed and comprehensive form, and the exposition is based on a combination of different tools and results from dynamical systems, microlocal analysis, spectral and scattering theory. The content of the first edition is still very relevant, however the new edition includes several new results established after 1992, and new text comprises about a third of the content of this new edition. Some basic generic properties established by the authors after the publication of the first edition establishing the wide range of applicability of the Poison relation are presented for the first time in this book.

About the Authors

Vesselin Petkov, Professor Emeritus, IMB, Université de Bordeaux, France.

Luchezar Stoyanov, Professor, School of Mathematics and Statistics, University of Western Australia.
In recent years many countries have decided to become involved in international educational assessments to allow them to ascertain the strengths and weaknesses of their student populations. Assessments such as the OECD’s Programme for International Student Assessment (PISA), the IEA’s Trends in Mathematics and Science Study (TIMSS) and Progress in International Reading Literacy (PIRLS) have provided opportunities for comparison between students of different countries on a common international scale. This book is designed to give researchers, policy makers and practitioners a well-grounded knowledge in the design, implementation, analysis and reporting of international assessments. Readers will be able to gain a more detailed insight into the scientific principles employed in such studies allowing them to make better use of the results. The book will also give readers an understanding of the resources needed to undertake and improve the design of educational assessments in their own countries and regions; it is written by experts in the field, with an international perspective. Survey researchers, market researchers and practitioners engaged in comparative projects will all benefit from the unparalleled breadth of knowledge and experience in large-scale educational assessments gathered in this one volume.

About the Authors

John Cresswell and Petra Lietz, Australian Council for Educational Research (ACER), Australia.

Keith Rust, Westat, University of Maryland, USA.
Analytics and statistical analysis have become pervasive topics, mainly due to the growing availability of data and analytic tools. Technology, however, fails to deliver insights with added value if the quality of the information it generates is not assured. Information Quality (InfoQ) is a tool developed by the authors to assess the potential of a dataset to achieve a goal of interest, using data analysis. Whether the information quality of a dataset is sufficient is of practical importance at many stages of the data analytics journey, from the pre-data collection stage to the post-data collection and post-analysis stages. It is also critical to various stakeholders: data collection agencies, analysts, data scientists, and management. This book will be beneficial for researchers in academia and in industry, analysts, consultants, and agencies that collect and analyse data as well as undergraduate and postgraduate courses involving data analysis.

About the Authors

Ron S. Kenett, Chairman and CEO of the KPA Group and KPA Ltd., Research Professor at the University of Turin, Italy, International Professor Associate at the Center for Research in Risk Engineering, NYU-Poly, USA and Visiting Professor at the Faculty of Economics, University of Ljubljana, Slovenia.

Galit Shmueli, Indian School of Business, India, is SRITNE Chaired Professor of Data Analytics and Associate Professor of Statistics & Information Systems at the Indian School of Business. She has taught at Carnegie Mellon University, University of Maryland, the Israel Institute of Technology, Statistics.com and the Indian School of Business.
This is a well-balanced and accessible introduction to elementary quantitative methods and Microsoft Office Excel applications used to guide business decision making. Featuring quantitative techniques essential for modeling modern business situations, *Introduction to Quantitative Methods in Business* provides guidance to assessing real-world data sets using Excel. The book presents a balanced approach to the mathematical tools and techniques, including applications, used in the areas of business, finance, economics, marketing, and operations. The authors begin by establishing a solid foundation of basic mathematics and statistics before moving on to more advanced concepts. Extensively classroom-tested, the text includes: numerous examples and practice problems that emphasize real-world business quantitative techniques and applications; excel-based computer software routines that explore calculations for an assortment of tasks, including graphing, formulae usage, solving equations, and data analysis; end-of-chapter sections detailing the Excel applications and techniques used to address data and solutions using large data sets; a companion website that includes chapter summaries, Excel data sets, sample exams and quizzes, and lecture slides.

**About the Authors**

**Bharat Kolluri, PhD,** is Professor of Economics in the Department of Economics, Finance, and Insurance at the University of Hartford and a member of the American Economics Association.

**Michael J. Panik, PhD,** is Professor Emeritus in the Department of Economics, Finance, and Insurance at the University of Hartford.

**Rao N. Singamsetti, PhD,** is Associate Professor in the Department of Economics, Finance, and Insurance at the University of Hartford and a member of the American Economics Association.
Written in a clear, precise and user-friendly style, *Logic as a Tool: A Guide to Formal Logical Reasoning* is intended for undergraduates in both mathematics and computer science, and will guide them to learn, understand and master the use of classical logic as a tool for doing correct reasoning. It offers a systematic and precise exposition of classical logic with many examples and exercises, and only the necessary minimum of theory.

The book explains the grammar, semantics and use of classical logical languages and teaches the reader how to grasp their meaning and translate them to and from natural language. It illustrates with extensive examples the use of the most popular deductive systems — axiomatic systems, semantic tableaux, natural deduction, and resolution — for formalising and automating logical reasoning both on propositional and on first-order level, and provides the reader with technical skills needed for practical derivations in them. Systematic guidelines are offered on how to perform logically correct and well-structured reasoning using these deductive systems and the reasoning techniques that they employ.

- Concise and systematic exposition, with semi-formal but rigorous treatment of the minimum necessary theory, amply illustrated with examples
- Emphasis both on conceptual understanding and on developing practical skills
- Solid and balanced coverage of syntactic, semantic, and deductive aspects of logic
- Includes extensive sets of exercises, many of them provided with solutions or answers
- Supplemented by a website including detailed slides, additional exercises and solutions

**About the Author**

**Valentin Goranko** is an associate professor at the Department of Applied Mathematics and Computer Science of the Technical University of Denmark. He has had over 25 years of University teaching and research experience: in particular, he has taught several courses partly based on this book.
This latest addition to the successful *Network Biology* series presents current methods for determining the entropy of networks, making it the first to cover the recently established Quantitative Graph Theory.

An excellent international team of editors and contributors provides an up-to-date outlook for the field, covering a broad range of graph entropy-related concepts and methods. The topics range from analyzing mathematical properties of methods right up to applying them in real-life areas.

Filling a gap in the contemporary literature this is an invaluable reference for a number of disciplines, including mathematicians, computer scientists, computational biologists, and structural chemists.

**About the Authors**

**Matthias Dehmer** studied mathematics at the University of Siegen (Germany) and received his Ph.D. in computer science from the Technical University of Darmstadt (Germany). Afterwards, he was a research fellow at Vienna Bio Center (Austria), Vienna University of Technology, and University of Coimbra (Portugal). He obtained his habilitation in applied discrete mathematics from the Vienna University of Technology. Currently, he is Professor at UMIT - The Health and Life Sciences University (Austria) and also holds a position at the Universität der Bundeswehr München. His research interests are in applied mathematics, bioinformatics, systems biology, graph theory, complexity and information theory. He has written over 180 publications in his research areas.

**Frank Emmert-Streib** studied physics at the University of Siegen (Germany) gaining his PhD in theoretical physics from the University of Bremen (Germany). He received postdoctoral training from the Stowers Institute for Medical Research (Kansas City, USA) and the University of Washington (Seattle, USA). Currently, he is an associate professor at the Queen’s University Belfast (UK) at the Center for Cancer Research and Cell Biology heading the Computational Biology and Machine Learning Laboratory. His main research interests are in the field of computational medicine, network biology and statistical genomics.
Research Methods for Postgraduates

*3rd Edition*

Tony Greenfield & Sue Greener  
*Industrial Research Consultant; Brighton Business School, Brighton, UK*

**ISBN:** 978-1-118-34146-9  |  **SEP 2016**  |  **504PP**  
**Previous Edition:** 978-0-470-66590-9

*Research Methods for Postgraduates* brings together guidance for postgraduate students on how to organise, plan and do research from an interdisciplinary perspective. In this new edition, the already wide-ranging coverage is enhanced by the addition of new chapters on social media, evaluating the research process, Kansei engineering and medical research reporting. The extensive updates also provide the latest guidance on issues relevant to postgraduates in all subject areas, from writing a proposal and securing research funds, to data analysis and the presentation of research, through to intellectual property protection and career opportunities.  

This thoroughly revised new edition provides:

- Clear and concise advice from distinguished international researchers on how to plan, organise and conduct research
- New chapters explore social media in research, evaluate the research process, Kansei engineering and discuss the reporting of medical research
- Checklists and diagrams throughout

**Praise for the second edition:**

“... the most useful book any new postgraduate could ever buy.” (New Scientist)

“The book certainly merits its acceptance as essential reading for postgraduates and will be valuable to anyone associated in any way with research or with presentation of technical or scientific information of any kind.” (Robotica)

Like its predecessors, the third edition of *Research Methods for Postgraduates* is accessible and comprehensive, and is a must-read for any postgraduate student.

**About the Author**

**Tony Greenfield,** is a visiting professor to the Industrial Statistics Research Unit (ISRU), the University of Newcastle-upon-Tyne and is past President of ENBIS, (European Network for Business and Industrial Statistics). He is a fellow of the Royal Statistical of the Royal Statistical Society and a Chartered Statistician. Tony received the William G Hunter Award presented by the Statistics Division of the American Society for Quality (ASQ). The citation reads: “For excellence in statistics as a communicator, a consultant, an educator, an innovator, an integrator of statistics with other disciplines, and an implementer who obtains meaningful results.”
This book presents material on both the analysis of the classical concepts of correlation and on the development of their robust versions, as well as discussing the related concepts of correlation matrices, partial correlation, canonical correlation, rank correlations, with the corresponding robust and non-robust estimation procedures. Every chapter contains a set of examples with simulated and real-life data.

Key features:

• Makes modern and robust correlation methods readily available and understandable to practitioners, specialists, and consultants working in various fields
• Focuses on implementation of methodology and application of robust correlation with R
• Introduces the main approaches in robust statistics, such as Hubers minimax approach and Hampels approach based on influence functions
• Explores various robust estimates of the correlation coefficient including the minimax variance and bias estimates as well as the most B- and V-robust estimates
• Contains applications of robust correlation methods to exploratory data analysis, multivariate statistics, statistics of time series, and to real-life data
• Includes an accompanying website featuring computer code and datasets
• Features exercises and examples throughout the text using both small and large data sets

Theoretical and applied statisticians, specialists in multivariate statistics, robust statistics, robust time series analysis, data analysis and signal processing will benefit from this book. Practitioners who use correlation-based methods in their work as well as postgraduate students in statistics will also find this book useful.

About the Authors

Georgy L. Shevlyakov, Department of Applied Mathematics, St. Petersburg State Polytechnic University, Russia.

Hannu Oja, School of Health Sciences, University of Tampere, Finland.
Simulation and the Monte Carlo Method, Third Edition

Reuven Y. Rubinstein & Dirk P. Kroese
Technion Institute of Israel; University of Queensland, Australia

Series: Wiley Series in Probability and Statistics
Previous Edition: 978-0-470-17794-5

Simulation and the Monte Carlo Method, Third Edition reflects the latest developments in the field and presents a fully updated and comprehensive account of the major topics that have emerged in Monte Carlo simulation since the publication of the classic first edition more than 25 years ago. While maintaining its accessible and intuitive approach, this revised edition features a wealth of up-to-date information that facilitates a deeper understanding of problem-solving across a wide array of subject areas, such as engineering, statistics, computer science, mathematics, and the physical and life sciences. The book begins with an updated introduction and subsequent chapters discuss the dramatic changes that have occurred in the field. New to this edition are two chapters on the classic splitting method, which is used widely by the simulation community, and stochastic enumeration. Cross-entropy (CE) programs are written in Matlab.

About the Authors
Reuven Y. Rubinstein is Professor Emeritus at Technion-Israel Institute of Technology. He has served as a consultant at several organizations including IBM, Motorola, and NEC and is the author of over 100 articles and six books.
Dirk P. Kroese is Senior Lecturer in Statistics at The University of Queensland, Australia and author of over fifty articles.
Solutions Manual to Accompany Introduction to Quantitative Methods in Business: with Applications Using Microsoft Office Excel
Bharat Kolluri, Michael J. Panik & Rao N. Singamsetti


Solutions Manual to accompany Introduction to Quantitative Methods in Business: With Applications Using Microsoft Office Excel (see previous page of this catalogue).

About the Authors

Bharat Kolluri, PhD, is Professor of Economics in the Department of Economics, Finance, and Insurance at the University of Hartford and a member of the American Economics Association.

Michael J. Panik, PhD, is Professor Emeritus in the Department of Economics, Finance, and Insurance at the University of Hartford.

Rao N. Singamsetti, PhD, is Associate Professor in the Department of Economics, Finance, and Insurance at the University of Hartford and a member of the American Economics Association.
This book presents the methodology and applications of a range of important topics in statistics, and is designed for graduate students in Statistics and Biostatistics and for medical researchers. Illustrations and more than ninety exercises with solutions are presented. They are constructed from the research findings of the medical journals, summary reports of the Centre for Disease Control (CDC) and the World Health Organization (WHO), and practical situations. The illustrations and exercises are related to topics such as immunization, obesity, hypertension, lipid levels, diet and exercise, harmful effects of smoking and air pollution, and the benefits of gluten free diet. This book can be recommended for a one or two semester graduate level course for students studying Statistics, Biostatistics, Epidemiology and Health Sciences. It is also useful as a companion for medical researchers and research-oriented physicians.

**About the Author**

**SRS Rao Poduri**, Professor of Statistics, University of Rochester. Professor Poduri has been teaching courses in five or six major areas of statistics to graduate and undergraduate students at the University of Rochester.
A thoroughly revised and updated edition of this introduction to modern statistical methods for shape analysis

Shape analysis is an important tool in the many disciplines where objects are compared using geometrical features. Examples include comparing brain shape in schizophrenia; investigating protein molecules in bioinformatics; and describing growth of organisms in biology.

This book is a significant update of the highly-regarded *Statistical Shape Analysis* by the same authors. The new edition lays the foundations of landmark shape analysis, including geometrical concepts and statistical techniques, and extends to include analysis of curves, surfaces, images and other types of object data. Key definitions and concepts are discussed throughout, and the relative merits of different approaches are presented.

The authors have included substantial new material on recent statistical developments and offer numerous examples throughout the text. Concepts are introduced in an accessible manner, while retaining sufficient detail for more specialist statisticians to appreciate the challenges and opportunities of this new field. Computer code has been included for instructional use, along with exercises to enable readers to implement the applications themselves in R and to follow the key ideas by hands-on analysis.

*Statistical Shape Analysis: with Applications in R* will offer a valuable introduction to this fast-moving research area for statisticians and other applied scientists working in diverse areas, including archaeology, bioinformatics, biology, chemistry, computer science, medicine, morphometrics and image analysis.

About the Authors

**Ian L. Dryden** is a Professor at The School of Mathematical Sciences, University of Nottingham.

**Kanti V. Mardia** is Professor Emeritus of The School of Mathematical Sciences department at the University of Leeds. His publications comprise over three hundred articles in statistical journals and numerous books, including *Statistical Shape Analysis, Statistics of Directional Data and Multivariate Analysis*. 
This book provides a seamless presentation that identifies valuable connections between statistical applications and research design using cases, examples, and discussion of specific topics from the social and health sciences. Class-tested to ensure an accessible presentation, the book combines clear, step-by-step explanations and the use of software packages that are accessible to both the novice and professional alike to present the fundamental statistical practices for organizing, understanding, and drawing conclusions from research data in their field.

About the Author

Martin Lee Abbott is Professor of Sociology at Seattle Pacific University, where he also serves as Executive Director of the Washington School Research Center, an independent research and data analysis center funded by the Bill and Melinda Gates Foundation. He is the author of Understanding Educational Statistics Using Microsoft Excel and SPSS, The Program Evaluation Prism and Understanding and Applying Research Design, also from Wiley.
The book focuses on advanced characterization methods for thin-film solar cells that have proven their relevance both for academic and corporate photovoltaic research and development. After an introduction to thin-film photovoltaics, highly experienced experts report on device and materials characterization methods such as electroluminescence analysis, capacitance spectroscopy, and various microscopy methods. In the final part of the book simulation techniques are presented which are used for ab-initio calculations of relevant semiconductors and for device simulations in 1D, 2D and 3D. Building on a proven concept, this new edition also covers thermography, transient optoelectronic methods, and absorption and photocurrent spectroscopy.

About the Authors

Daniel Abou-Ras is senior scientist at the Helmholtz Center Berlin for Materials and Energy, Germany. He obtained his PhD at ETH Zurich, Switzerland. In 2005, he was awarded the MRS Graduate Student Gold Award at the MRS Spring Meeting. His research interests are scanning as well as transmission electron microscopy techniques applied on thin-film solar cells.

Thomas Kirchartz is scientist at the Institute of Energy at the Research Center Jülich, Germany. He obtained his engineering degree from the University of Stuttgart for a work on the electroluminescence of solar cells in 2006 and his PhD from the RWTH Aachen in 2009 for a work on a detailed balance theory of solar cells.

Uwe Rau is full professor at the Faculty Electrical Engineering and Computer Science of the RWTH Aachen, Germany, since 2007 and head of the Institute of Energy at the Research Center Jülich, Germany. He obtained his PhD 1991 from the University Tübingen and was scientific group leader from 1995-2007 at the Universities of Bayreuth and Stuttgart.
This book introduces novel concepts going beyond classical borders in mechanics and physics, bridging material properties at the nano/microscale with mechanical properties at large scales, while addressing cases that go beyond material failure. To begin with, the authors explain how to define the fracture threshold of a material and link it to its microscopic properties, describing the two main families of mechanisms: brittle and ductile. They then go on to show how understanding how materials break extends beyond the prediction of these fracture thresholds, outlining an equation for predicting the path of a fault and the speed at which it spreads. They also discuss the specific geometric properties of networks of cracks, which result from their interaction. Regarding the dynamics of cracks, the book focuses on extreme behaviors: very low and very high speeds. Finally, the authors show that an essential ingredient is lacking in the description of the fracture of materials as it was proposed in the last century: heterogeneities of solids.

**About the Authors**

Elisabeth Bouchaud is a senior researcher at the Atomic Energy Commission (CEA). She has done pioneering work in using concepts of statistical physics in fracture mechanics and received numerous scientific awards.

Laurent Ponson is a research associate at the University Pierre et Marie Curie in Paris.
Ionospheric Space Weather
Longitude and Hemispheric Dependencies and Lower Atmosphere Forcing
Timothy Fuller-Rowell, Endawoke Yizengaw, Patricia H. Doherty & Sunanda Basu

Series: Geophysical Monograph Series
ISBN: 978-1-118-92920-9 | NOV 2016 | 312PP
Previous Edition: 978-1-118-84734-3

This monograph is the outcome of an American Geophysical Union Chapman Conference on longitude and hemispheric dependence of ionospheric space weather, including the impact of waves propagating from the lower atmosphere. The Chapman Conference was held in Africa as a means of focusing attention on an extensive geographic region where observations are critically needed to address some of the fundamental questions of the physical processes driving the ionosphere locally and globally. The compilation of papers from the conference describes the physics of this system and the mechanisms that control ionospheric space weather in a combination of tutorial-like and focused articles that will be of value to the upper atmosphere scientific community in general and to ongoing global magnetosphere-ionosphere-thermosphere (MIT) modeling efforts in particular.

About the Authors
Dr. Tim Fuller-Rowell, Senior Research Scientist and a Fellow of the Cooperative Institute for Research in Environmental Sciences at the University of Colorado Boulder.

Dr. Endawoke Yizengaw, Ms. Patricia H. Doherty, and Dr. Sunanda Basu are Senior Research Scientists in the Institute for Scientific Research, at the Boston College.
A concise, in-depth introduction to active disturbance rejection control theory for nonlinear systems, with numerical simulations and clearly worked out equations. This provides the fundamental, theoretical foundation for applications of active disturbance rejection control and features numerical simulations and clearly worked out equations. It highlights the advantages of active disturbance rejection control, including small overshooting, fast convergence, and energy savings.

**About the Authors**

**Bao-Zhu Guo**, Chinese Academy of Sciences, China.

**Zhi-Liang Zhao**, Associate Professor, Shaanxi Normal University, China.
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**Contact**

**Nicole Feanny**  
Bosnian, Bulgarian, Croatian, Czech, Estonian, Georgian, German, Hungarian, Latvian, Lithuanian, Polish, Romanian, Russian, Serbian, Slovakian, Slovenian

**Julie Attrill**  
African languages, Albanian, Arabic, Armenian, Azerbaijani, Danish, Dutch, Finnish, Greek, Hebrew, Hindi, Kazakh, Marathi, Norwegian, Persian, Swedish

**Natasha De Bernardi**  
French, Italian

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English Reprint

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Portuguese, Spanish, Turkish

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