

# Professional Learning Catalogue

Spring/Summer 2020





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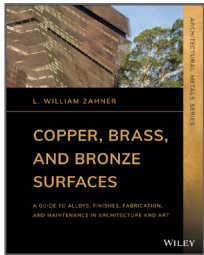
# Architecture, Construction & Civil Engineering



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WILEY





## Copper, Brass, and Bronze Surfaces

A Guide to Alloys, Finishes, Fabrication and Maintenance in Architecture and Art

L. William Zahner

**Series:** Architectural Metals Series • **ISBN:** 978-1-119-54166-0 • Apr 2020 • 368pp

**A comprehensive and authoritative treatment of copper, brass, and bronze applications in architecture and art**

*Copper, Brass, and Bronze*, the third book in *Zahner's Architectural Metals Series*, is a comprehensive and authoritative treatment of copper, brass, and bronze applications in architecture and art. This visual, full-color guide offers architecture and design professionals the information they need to ensure proper maintenance and fabrication techniques. Zahner's approach to the use of copper, brass, and bronze in architecture and art covers everything from the history of the metals and choosing the right alloy, to detailed information on a variety of surface and chemical finishes and corrosion resistance. Case studies offer architecture and design professionals strategies for designing and executing successful projects using copper, brass, and bronze.

About the series: *Zahner's Architectural Metals Series* offers in-depth coverage of today's most commonly used metals in architecture and art. These heavily illustrated guides offer comprehensive coverage of how each metal is used in creating surfaces for building exteriors, interiors, and art finishes. Volumes in the series cover: Stainless Steel; Aluminum; Copper, Brass and Bronze; Steels; and Zinc.



## Graphic Design School, 7th Edition

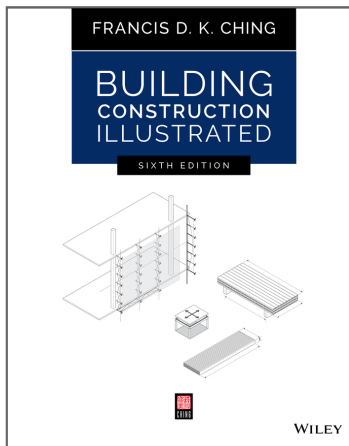
The Principles and Practice of Graphic Design

David Dabner, Sandra Stewart & Abbie Vickress

**ISBN:** 978-1-119-64711-9 • Mar 2020 • 208pp • **Previous Edition:** 978-1-119-34316-5

**The essential introduction to graphic design for the digital era**

From understanding graphic design fundamentals, to developing original concepts, to creating finished designs—*Graphic Design School* develops design students' core competencies and provides practical advice and tips for how these fundamentals translate into new and evolving media. This *Seventh Edition* offers all new examples from web, app, social media, magazines, websites and books, presenting a comprehensive overview of the visual communications profession. This updated edition includes guidance and media examples using the latest in graphic design software, and traditional printing techniques such as risograph and screen printing are revisited. Pedagogical tools throughout the text focus on the growth of interdisciplinary learning and collaborations between design specialists, as well as highlights on key players in the past and present of graphic design. Topics covered include: color, typographic rules and typefaces, coding requirements, information architecture, file organization, web design and layout, mobile device composition, app design, CMS, designing for social media, and SEO. *Graphic Design School, 7th Edition* includes full-color illustrations throughout, as well as case studies, designer biographies, and student assignments for testing skills and concepts.



ISBN: 978-1-119-58308-0

**Previous Edition:**  
978-1-118-45834-1

Mar 2020 • 512pp

# Building Construction Illustrated, 6th Edition

Francis D. K. Ching

Rights Licensed in Korean, Orthodox Chinese

Previous editions licensed in Bahasa Indonesian, French, Korean, Orthodox Chinese, Portuguese, Russian, Simplified Chinese, Thai, Turkish

**The #1 visual guide to building construction principles, updated with the latest materials, methods, and systems**

For over four decades, *Building Construction Illustrated* has been the leading visual guide to the principles of building construction. Filled with rich illustrations and in-depth content by renowned author Francis D.K. Ching, it offers students and practicing professionals the information needed to understand concepts in residential and commercial construction, architecture, and structural engineering.

This Sixth Edition of *Building Construction Illustrated* has been revised throughout to reflect the latest advancements in building design, materials, and systems, including resilient design, diagrids, modular foundation systems, smart façade systems, lighting sources, mass timber materials, and more. It features new illustrations and updated information on sustainability and green building, insulation materials, and fire-rated wall and floor assemblies. This respected, industry standard guide remains as relevant as ever, providing the latest in codes and standards requirements, including IBC, LEED, and CSI MasterFormat. This Sixth Edition:

- The leading illustrated guide to building construction fundamentals, written and detailed in Frank Ching's signature, illustrative style
- Includes all new sections on resilient design; diagrids; modular foundation systems; smart façade types and systems; lighting sources and systems; and mass timber materials, cross laminated timber (CLT) and nail laminated timber (NLT)
- Revised to reflect that latest updates in codes and standards requirements: 2018 International Building Code (IBC), LEED v4, and CSI MasterFormat 2018
- Includes updated information on sustainability and green building; insulation materials; stair uses; stoves and inserts; and fire-rated wall and floor assemblies
- Offers instructors access to an Instructor's Manual with review questions

*Building Construction Illustrated*, Sixth Edition is an excellent book for students in architecture, civil and structural engineering, construction management, and interior design programs. Ching communicates these core principles of building construction in a way that resonates with those beginning their education and those well into their careers looking to brush up on the basics. *Building Construction Illustrated* is a reliable, lifelong guide that practicing architects, engineers, construction managers, and interior designers, will turn to time and again throughout their careers.

## About the Author

**Francis D.K. Ching** (Seattle, WA) is one of the leading authorities on architectural design drawing around the world. His numerous bestselling works have been translated into 20 languages and are regarded as classics for their renowned graphic presentation. He is a registered architect and Professor Emeritus at the University of Washington in Seattle.





ISBN: 978-1-119-45101-3

**Previous Edition:**  
978-0-470-60999-6

Mar 2020 • 512pp

# Construction Management JumpStart, 3rd Edition

The Best First Step Toward a Career in Construction Management

Barbara J. Jackson



**The bestselling introduction to the field, updated and expanded**

*Construction Management Jumpstart* is the definitive introduction to the field, providing a detailed walkthrough of each stage of a project from the construction manager's perspective. Authoritative coverage of fundamental concepts and practices clearly delineates the manager's role, while step-by-step guidance provides valuable instruction for essential management duties. This new third edition has been updated to reflect the field's current environment and best practices, giving students a highly-relevant introduction to an evolving industry. Three new chapters include insightful discussion of the pre-construction phase, team management, and sustainability; challenging chapter review questions help reinforce important concepts and help translate them to practice.

Construction managers work alongside project managers, and use many of the same tried-and-true techniques—but construction managers must also adhere to a vast array of industry-specific standards and regulations. This book helps you build a foundation in critical concepts and practices while tailoring traditional project management techniques to the construction management sphere.

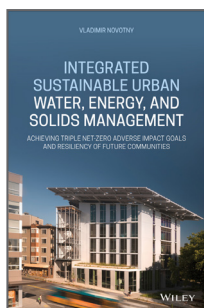
- Understand essential management roles and responsibilities for each stage of a construction project
- Learn how to estimate costs, administer contracts, manage operations, monitor performance, assess risks, and more
- Explore critical concepts in planning and scheduling that help keep projects running on-time and on-budget
- Discover how Building Information Modeling software is impacting the industry, and how it affects construction management

Evolving regulations, advancing technology, and economies in flux all impact the construction industry in a number of ways; management's job is to clear obstacles to delivery and streamline the project's completion. To be effective, construction managers must stay up to date on the latest tools and best practices, and have a strong grasp of the fundamentals of the role. *Construction Management Jumpstart* provides a practical, highly-relevant introduction to the field.

## About the Author

**Dr. Barbara Jackson** (Denver, CO) is Director of the Franklin L. Burns School of Real Estate and Construction Management, Daniels College of Business at the University of Denver. Previously she was a professor in the College of Architecture and Environmental Designs Construction Management Department at Cal Poly San Luis Obispo. Her professional and academic experience spans real estate development, homebuilding, commercial construction, project management, and facilities management and operations. Jackson has received numerous awards, including the Service Recognition Award from the U.S. Department of State, Bureau of Overseas Building Operations and the Certificate of Appreciation for the South Pacific Division, Regional Business Center, U.S. Army Corps of Engineers.





### Integrated Sustainable Urban Water, Energy and Solids Management Achieving Triple Net Zero Adverse Impact Goals and Resiliency of Future Communities

Vladimir Novotny

ISBN: 978-1-119-59365-2 • Mar 2020 • 416pp

#### A guide for urban areas to achieve sustainability by recovering water, energy, and solids

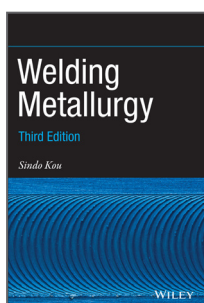
*Integrated Sustainable Urban Water, Energy, and Solids Management* presents an integrated and sustainable system of urban water, used (waste) water, and waste solids management that would save and protect water quality, recover energy and other resources from used water and waste solids including plastics, and minimize or eliminate the need for landfills. The author—a noted expert on the topic—explains how to accomplish sustainability with drainage infrastructures connected to receiving waters that protect or mimic nature and are resilient to natural and anthropogenic stresses, including extreme events.

The book shows how to reduce emissions of greenhouse gasses to net zero level through water conservation, recycling, and generating blue and green energy from waste by emerging emission free technologies while simultaneously installing solar power on houses and wind power in communities. Water conservation and stormwater capture can provide good water quality for diverse applications from natural and reclaimed water to blue and green energy and other resources for use by present and future generations. This important book:

- Considers municipal solid waste as an ongoing source of energy and resources that will eliminate the need for landfills and can be processed along with used water
- Presents an integrated approach to urban sustainability
- Offers an approach for reducing greenhouse gas emissions by communities to net zero

Written for students, urban planners, managers, and waste management professionals, *Integrated Sustainable Urban Water, Energy, and Solids Management* is a must-have guide for achieving sustainable integrated water, energy, and resource recovery in urban areas.

## MATERIALS SCIENCE



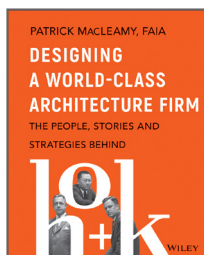
### Welding Metallurgy, 3rd Edition

Sindo Kou

ISBN: 978-1-119-52481-6 • Aug 2020 • TBA • Previous Edition: 978-0-470-25234-5, 978-0-471-43491-7

*Welding Metallurgy* by Sindo Kou has been used worldwide as a reference book for welding practitioners and researchers since it was published in 1987. The third edition provides many updated features including a simple criterion for predicting effect of filler metals on liquation cracking, an index and analytical equations for predicting susceptibility to solidification cracking, a test for evaluating susceptibility to solidification cracking and filler-metal effect, and more. New topics touched on by the author include weldability of magnesium alloys, friction stir welding, and transport phenomena such as surfactant effect on flow oscillation, metal-vapor effect on arc temperature and weld shape, and spatter.

## PROFESSIONAL PRACTICE



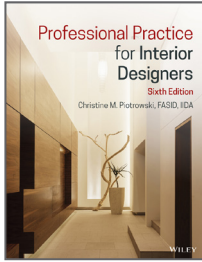
### Designing a World Class Architecture Firm The People, Stories, and Strategies Behind HOK

Patrick MacLeamy

ISBN: 978-1-119-68530-2 • May 2020 • 304pp

#### Discover the revolutionary strategies behind one of the top ten largest architecture firms in the world

*Designing a World Class Architecture Firm: The People, Stories and Strategies Behind HOK* offers exclusive insights into the revolutionary strategies behind one of the top ten largest architecture firms in the world. Written with dashes of memoir by the former CEO, Patrick MacLeamy, this book offers practicing architecture professionals in small to mid-sized firms and other design professionals such as interior designers and urban planners with detailed guidance for reinvigorating company culture, establishing financial metrics, attracting and retaining talent, diversifying services and firm expansion. This book is flavored with dozens of quirky stories from MacLeamy's time at the helm of HOK, and while it is not a design book - MacLeamy offers insights into many of HOK's most iconic projects, including: Smithsonian National Air and Space Museum in Washington, D.C., Oriole Park at Camden Yards in Baltimore, MD, and more.



## Professional Practice for Interior Designers, 6th Edition

Christine M. Piotrowski

ISBN: 978-1-119-55451-6 • Mar 2020 • 768pp • Previous Edition: 978-1-118-09079-4

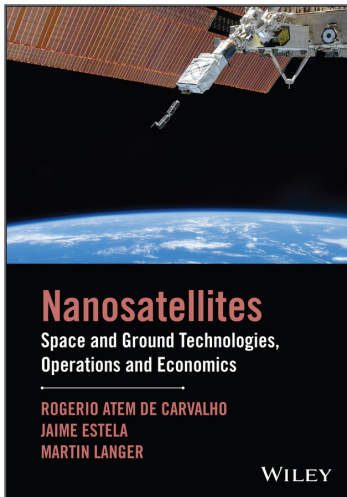
### The go-to comprehensive business guide for aspiring designers and practicing professionals

Understanding the business side of interior design is a major part of the designer's education. *Professional Practice for Interior Designers* has been the go-to comprehensive business guide for aspiring designers and practicing professionals for nearly thirty years. As the interior design industry continues to evolve, this Sixth Edition has evolved to meet the needs of today's design students and practicing professionals. This edition includes three new chapters: Interior Design in the Global Environment, Building Client Relationships, and Marketing Communications; revised sections on Web and Social Media Marketing, Personal Branding, Design Contracts for Global Projects, and Sustainable Product Resources; and invaluable elements in every chapter for students and instructors, including, NCIDQ Exam Components, What Would You Do? scenarios, and lists of key terms and references. Instructors will have access to an extensive Instructor's Manual that includes over 390 multiple choice and 260 true/false questions, web exercises, and discussion items and assignments by chapter.

# Physical Sciences & Engineering







ISBN: 978-1-119-04203-7

May 2020 • 517pp

# Nano-Satellites

## Space and Ground Technologies, Operations and Economics

Rogerio Atem de Carvalho, Jaime Estela &amp; Martin Langer



### Covering the latest research on nanosatellites

*Nanosatellites: Space and Ground Technologies, Operations and Economics* comprehensively presents the latest research on the fast-developing area of nanosatellites. Divided into three distinct sections, the book begins with a brief history of nanosatellites and introduces nanosatellites technologies and payloads, also explaining how these are deployed into space. The second section provides an overview of the ground segment and operations, and the third section focuses on the regulations, policies, economics, and future trends.

Key features:

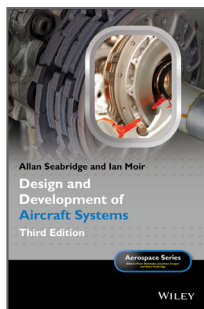
- Payloads for nanosatellites
- Nanosatellites components design
- Examines the cost of development of nanosatellites.
- Covers the latest policies and regulations.
- Considers future trends for nanosatellites.

*Nanosatellites: Space and Ground Technologies, Operations and Economics* is a comprehensive reference for researchers and practitioners working with nanosatellites in the aerospace industry.

### About the Authors

**Rogerio Atem de Carvalho**, University of Fluminense, Brazil. Dr. Atem de Carvalho is a Professor in the Production Engineering at the University of Fluminense. He specializes in satellite-to-ground-communication subsystems and ground segments. Over the last twenty years he has acted as a consultant on software development for private and public sectors.

**Jaime Estela**, Spectrum Aerospace Group, Germany and Peru. Mr. Jaime Estela is an electronic engineer born in Lima-Peru. He worked at the German Space Operations Center of DLR in Oberpfaffenhofen for 11 years. In this period he gathered experience in satellite operations and systems engineering and supported several LEO orbit satellite missions such as Terrasar-X, Tandem-X, Prisma A & B, Grace 1 & 2, CHAMP, BIRD, TET and was also involved, as Ground Segment Engineer, in the ESA project Columbus, space laboratory onboard the ISS. In 2010 he founded Spectrum ARC GmbH and served as CEO/CTO. He is currently managing the company Spectrum Aerospace Technologies UG (Munich-Germany) and Spectrum Aerospace Research Corporation S.A.C. (Lima-Peru). Both companies belong to the Spectrum Aerospace Group. Mr. Estela has published and co-authored papers and articles in international journals and conference proceedings.



## Design and Development of Aircraft Systems, 3rd Edition

Allan Seabridge & Ian Moir

**Series:** Aerospace Series • **ISBN:** 978-1-119-61150-9 • Apr 2020 • 400pp • **Previous Edition:** 978-1-119-94119-4

**Previous Editions Licensed in Simplified Chinese**

### Provides a significant update to the definitive book on aircraft system design

This book is written for anyone who wants to understand how industry develops the customer requirement for aircraft into a fully integrated, tested, and qualified product that is safe to fly and fit for purpose. The new edition of *Design and Development of Aircraft Systems* fully expands its already comprehensive coverage to include both conventional and unmanned systems. It also updates all chapters to bring them in line with current design practice and technologies taught in courses at Cranfield, Bristol, and Loughborough universities in the UK.

*Design and Development of Aircraft Systems, 3rd Edition* begins with an introduction to the subject. It then introduces readers to the aircraft systems (airframe, vehicle, avionic, mission, and ground systems). Following that comes a chapter on the design and development process. Other chapters look at design drivers, systems architectures, systems integration, verification of system requirements, practical considerations, and configuration control. The book finishes with sections that discuss the potential impact of complexity on flight safety, key characteristics of aircraft systems, and more.

- Provides a holistic view of aircraft system design, describing the interactions among subsystems such as fuel, navigation, flight control, and more
- Substantially updated coverage of systems engineering, design drivers, systems architectures, systems integration, modelling of systems, practical considerations, and systems examples
- Incorporates essential new material on the regulatory environment for both manned and unmanned systems
- Discussion of trends towards complex systems, automation, integration and the potential for an impact on flight safety

*Design and Development of Aircraft Systems, 3rd Edition* is an excellent book for aerospace engineers, researchers, and graduate students involved in the field.

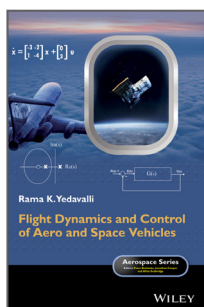


## Essentials of Supersonic Commercial Aircraft Conceptual Design

Egbert Torenbeek

**Series:** Aerospace Series • **ISBN:** 978-1-119-66700-1 • Jul 2020 • 275pp

Since the birth of Concorde there has been a wealth of scientific publications on topics such as the development of supersonic cruise vehicles, aerodynamics, propulsion, structural design and flight physics, in particular analysis of the sonic boom. However, since the demise of Concorde more than half a century ago there are no designers left with the experience and knowledge required for developing a new initial design proposal. *Conceptual Design of Supersonic Commercial Aircraft* addresses this need and is a must-have guide to conceptual supersonic aircraft design, providing a state-of-the-art overview, expert analysis and discussion. It examines the challenges of high-speed flight, covers aerodynamic phenomena in supersonic flow and aerodynamic drag in cruising flight, and discusses the advantages and disadvantages of oblique wing aircraft.



## Flight Dynamics and Control of Aero and Space Vehicles

Rama K. Yedavalli

**Series:** Aerospace Series • **ISBN:** 978-1-118-93445-6 • Mar 2020 • 560pp

### A comprehensive textbook which presents flight vehicle dynamics and control in a unified framework

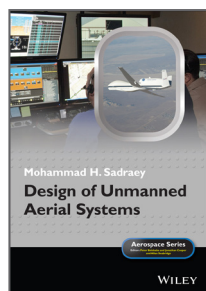
*Flight Vehicle Dynamics and Control* presents the dynamics and control of various flight vehicles, including aircraft, spacecraft, helicopter, missiles, etc, in a unified framework. It covers the fundamental topics in the dynamics and control of these flight vehicles, highlighting shared points as well as differences in dynamics and control issues, making use of the 'systems level' viewpoint.

The book begins with the derivation of the equations of motion for a general rigid body and then delineates the differences between the dynamics of various flight vehicles in a fundamental way. It then focuses on the dynamic equations with application to these various flight vehicles, concentrating more on aircraft and spacecraft cases. Then the control systems analysis and design is carried out both from transfer function, classical control, as well as modern, state space control points of view. Illustrative examples of application to atmospheric and space vehicles are presented, emphasizing the 'systems level' viewpoint of control design.

Key features:

- Provides a comprehensive treatment of dynamics and control of various flight vehicles in a single volume.
- Contains worked out examples (including MATLAB examples) and end of chapter homework problems.
- Suitable as a single textbook for a sequence of undergraduate courses on flight vehicle dynamics and control.
- Accompanied by a website that includes additional problems and a solutions manual.

The book is essential reading for undergraduate students in mechanical and aerospace engineering, engineers working on flight vehicle control, and researchers from other engineering backgrounds working on related topics.



## Unmanned Aircraft Design Techniques

Mohammad H. Sadraey

**Series:** Aerospace Series • **ISBN:** 978-1-119-50870-0 • Mar 2020 • 664pp

**Provides a comprehensive introduction to the design and analysis of unmanned aircraft systems with a systems perspective**

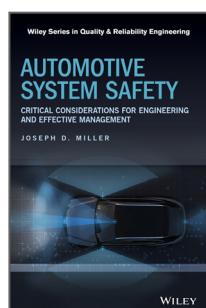
Written for students and engineers who are new to the field of unmanned aerial vehicle design, this book teaches the many UAV design techniques being used today and demonstrates how to apply aeronautical science concepts to their design.

*Design of Unmanned Aerial Systems* covers the design of UAVs in three sections—vehicle design, autopilot design, and ground systems design—in a way that allows readers to fully comprehend the science behind the subject so that they can then demonstrate creativity in the application of these concepts on their own. It teaches students and engineers all about: UAV classifications, design groups, design requirements, mission planning, conceptual design, detail design, and design procedures. It provides them with in-depth knowledge of ground stations, power systems, propulsion systems, automatic flight control systems, guidance systems, navigation systems, and launch and recovery systems. Students will also learn about payloads, manufacturing considerations, design challenges, flight software, microcontroller, and design examples. In addition, the book places major emphasis on the automatic flight control systems and autopilots.

- Provides design steps and procedures for each major component
- Presents several fully solved, step-by-step examples at component level
- Includes numerous UAV figures/images to emphasize the application of the concepts
- Describes real stories that stress the significance of safety in UAV design
- Offers various UAV configurations, geometries, and weight data to demonstrate the real-world applications and examples
- Covers a variety of design techniques/processes such that the designer has freedom and flexibility to satisfy the design requirements in several ways
- Features many end-of-chapter problems for readers to practice

*Design of Unmanned Aerial Systems* is an excellent text for courses in the design of unmanned aerial vehicles at both the upper division undergraduate and beginning graduate levels.

## AUTOMOTIVE ENGINEERING



## Automotive System Safety

Critical Considerations for Engineering and Effective Management

Joseph D. Miller

**Series:** Quality and Reliability Engineering Series • **ISBN:** 978-1-119-57962-5 • Mar 2020 • 240pp

**Contains practical insights into automotive system safety with a focus on corporate safety organization and safety management**

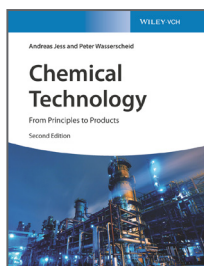
Functional Safety has become important and mandated in the automotive industry by inclusion of ISO 26262 in OEM requirements to suppliers. This unique and practical guide is geared toward helping small and large automotive companies, and the managers and engineers in those companies, improve automotive system safety. Based on the author's experience within the field, it is a useful tool for marketing, sales, and business development professionals to understand and converse knowledgeably with customers and prospects.

*Automotive System Safety: Critical Considerations for Engineering and Effective Management* teaches readers how to incorporate automotive system safety efficiently into an organization. Chapters cover: Safety Expectations for Consumers, OEMs, and Tier 1 Suppliers; System Safety vs. Functional Safety; Safety Audits and Assessments; Safety Culture; and Lifecycle Safety. Sections on Determining Risk; Risk Reduction; and Safety of the Intended Function are also presented. In addition, the book discusses causes of safety recalls; how to use metrics as differentiators to win business; criteria for a successful safety organization; and more.

- Discusses Safety of the Intended Function (SOTIF), with a chapter about an emerging standard (SOTIF, ISO PAS 21448), which is for handling the development of autonomous vehicles
- Helps safety managers, engineers, directors, and marketing professionals improve their knowledge of the process of FS standards
- Aimed at helping automotive companies—big and small—and their employees improve system safety
- Covers auditing and the use of metrics

*Automotive System Safety: Critical Considerations for Engineering and Effective Management* is an excellent book for anyone who oversees the safety and development of automobiles. It will also benefit those who sell and market vehicles to prospective customers.





## Chemical Technology, 2nd Edition

From Principles to Products

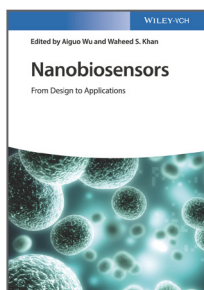
Andreas Jess & Peter Wasserscheid

ISBN: 978-3-527-34421-5 • Mar 2020 • 912pp • **Previous Edition:** 978-3-527-30446-2, 978-3-527-30446-2

A fully updated edition of a popular textbook covering the four disciplines of chemical technology?featuring new developments in the field Clear and thorough throughout, this textbook covers the major sub-disciplines of modern chemical technology?chemistry, thermal and mechanical unit operations, chemical reaction engineering, and general chemical technology?alongside raw materials, energy sources and detailed descriptions of 24 important industrial processes and products. It brings information on energy and raw material consumption and production data of chemicals up to date and offers not just improved and extended chapters, but completely new ones as well. This new edition of Chemical Technology: From Principles to Products features a new chapter illustrating the global economic map and its development from the 15th century until today, and another on energy consumption in human history. Chemical key technologies for a future sustainable energy system such as power-to-X and hydrogen storage are now also examined. Chapters on inorganic products, material reserves, and water consumption and resources have been extended, while another presents environmental aspects of plastic pollution and handling of plastic waste. The book also adds four important processes to its pages: production of titanium dioxide, silicon, production and chemical recycling of polytetrafluoroethylene, and fermentative synthesis of amino acids.

- Provides comprehensive coverage of chemical technology? from the fundamentals to 24 of the most important processes -Intertwines the four disciplines of chemical technology: chemistry, thermal and mechanical unit operations, chemical reaction engineering and general chemical technology
- Fully updated with new content on: power-to-X and hydrogen storage; inorganic products, including metals, glass, and ceramics; water consumption and pollution; and additional industrial processes
- Written by authors with extensive experience in teaching the topic and helping students understand the complex concepts

*Chemical Technology: From Principles to Products, Second Edition* is an ideal textbook for advanced students of chemical technology and will appeal to anyone in chemical engineering.



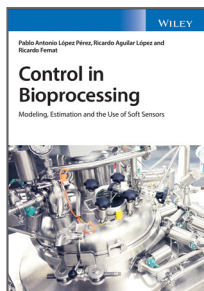
## Nanobiosensors

From Design to Applications

Aiguo Wu & Waheed S. Khan

ISBN: 978-3-527-34510-6 • Apr 2020 • 392pp

This book covers several aspects of biosensors beginning from the basic concepts to advanced level research. It will help to bridge the gap between various aspects of biosensors development technology and applications. It covers biosensors related material in broad spectrum such as basic concepts, biosensors & their classification, biomarkers & their role in biosensors, nanostructures based biosensors, applications of biosensors in human diseases, drug detection, toxins, and smart phone based biosensors. This book will prove a source of inspiration for research on biosensors, their local level development and consequently using for practical application in different industries such as food, biomedical diagnosis, pharmaceuticals, agriculture, drug discovery, forensics, etc.



### Control in Bioprocessing Modeling, Estimation and the Use of Soft Sensors

Pablo A. López Pérez, Ricardo Aguilar López & Ricardo Femat

ISBN: 978-1-119-29599-0 • Jun 2020 • 400pp

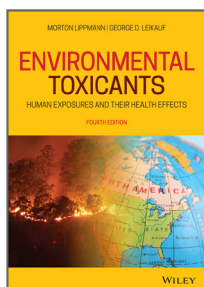
#### Closes the gap between bioscience and mathematics-based process engineering

This book presents the most commonly employed approaches in the control of bioprocesses. It discusses the role that control theory plays in understanding the mechanisms of cellular and metabolic processes, and presents key results in various fields such as dynamic modeling, dynamic properties of bioprocess models, software sensors designed for the online estimation of parameters and state variables, and control and supervision of bioprocesses.

*Control in Bioengineering and Bioprocessing: Modeling, Estimation and the Use of Sensors* is divided into three sections. Part I, Mathematical preliminaries and overview of the control and monitoring of bioprocess, provides a general overview of the control and monitoring of bioprocesses, and introduces the mathematical framework necessary for the analysis and characterization of bioprocess dynamics. Part II, Observability and control concepts, presents the observability concepts which form the basis of design online estimation algorithms (software sensor) for bioprocesses, and reviews controllability of these concepts, including automatic feedback control systems. Part III, Software sensors and observer-based control schemes for bioprocesses, features six application cases including dynamic behavior of 3-dimensional continuous bioreactors; observability analysis applied to 2D and 3D bioreactors with inhibitory and non-inhibitory models; and regulation of a continuously stirred bioreactor via modeling error compensation.

- Applicable across all areas of bioprocess engineering, including food and beverages, biofuels and renewable energy, pharmaceuticals and nutraceuticals, fermentation systems, product separation technologies, wastewater and solid-waste treatment technology, and bioremediation
- Provides a clear explanation of the mass-balance-based mathematical modelling of bioprocesses and the main tools for its dynamic analysis
- Offers industry-based applications on: myco-diesel for implementing “quality” of observability; developing a virtual sensor based on the Just-In-Time Model to monitor biological control systems; and virtual sensor design for state estimation in a photocatalytic bioreactor for hydrogen production

*Control in Bioengineering and Bioprocessing* is intended as a foundational text for graduate level students in bioengineering, as well as a reference text for researchers, engineers, and other practitioners interested in the field of estimation and control of bioprocesses.



### Environmental Toxicants, 4th Edition Human Exposures and Their Health Effects

Morton Lippmann & George D Leikauf

ISBN: 978-1-119-43880-9 • Mar 2020 • 1006pp • **Previous Edition:** 978-0-471-79335-9

#### An Updated Reference on Human Exposure to Environmental Toxicants and A Study of Their Impact on Public Health

With the 4th edition of *Environmental Toxicants: Human Exposures and Their Health Effects*, readers have access to up-to-date information on the study and science of environmental toxicology and public health worldwide. Practitioners and professionals can use this resource to understand newly discovered information on the adverse health effects of toxins and pollutants in air, water, and occupational and environmental environments on large human populations.

The 4th edition of this book is updated to reflect new knowledge and research on:

- Performing risk assessments on exposed individuals
- Assessing the effects of toxicants and substances on large populations for health and medical professionals
- Patterns of human exposure to select chemical toxicants
- World Trade Center dust, agents for chemical terrorism, and nanoparticles

For health professionals, including health authorities, public health officials, physicians, and industrial managers, who are seeking new research and techniques for managing environmental substances, this invaluable reference will guide you through in a thorough, easy-to-read manner.

**Sustainable  
Metal  
Extraction  
from Waste  
Streams**

**Sustainable Metal Extraction from Waste Streams**

Garima Chauhan, Perminder Jit Kaur, K.K. Pant & K.D.P. Nigam

ISBN: 978-3-527-34755-1 • Jun 2020 • 312pp

**Provides a comprehensive overview on developing sustainable practices for waste minimization via green metal extraction from waste streams**

This book introduces readers to sustainable management and defines the challenges as well as the opportunities in waste stream management. It starts by covering conventional technologies for metal extraction then focuses on emerging tools and techniques such as green adsorption, bioleaching, and chelation. It also discusses the scale-up and process intensification of metal extraction from waste streams from process design to pilot plan.

Sustainable Metal Extraction from Waste Streams begins by covering sustainability-related constructs and illustrates the pre-requisites for sustainable management of waste streams. It then introduces the basics of solid waste handling, ranging from an analysis of the relevance, categories of wastes, consequences of untreated waste disposal into the environment, government initiatives, management strategies, and unit operations for pre-treatment of wastes. The book also looks at widely accepted, conventional metal extraction technologies like hydro and pyro metallurgical methods; discusses the possibility of sustainable green processes for metal extraction; and introduces the recently deployed coiled flow inverter process.

- Provides a comprehensive collection of the conventional, emerging, and future technologies for metal extraction from industrial waste and electrical & electronic equipment in a sustainable way
- Demonstrates trans-disciplinary research as an executable direction to achieve the sustainable governance of natural resources and solid waste management
- Presents a dedicated section on scale-up and process intensification of metallurgical processes
- Summarizes various aspects of novel processes ranging from basic concepts, benchmark performance of technologies on lab scale, and recent research trends in metal extraction

Covering a variety of interdisciplinary topics on resource optimization and waste minimization, Sustainable Metal Extraction from Waste Streams is an excellent resource for engineers, science students, entrepreneurs, and organizations who are working in the field of waste management and wish to gain information on upcoming sustainable processes.

**Foundations of  
Organic Chemistry**

Unity and Diversity  
of Structures, Pathways,  
and Reactions

SECOND EDITION

DAVID R. DALTON

WILEY

**Foundations of Organic Chemistry, 2nd Edition**

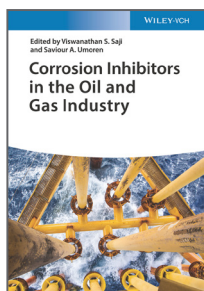
Unity and Diversity of Structures, Pathways, and Reactions

David R. Dalton

ISBN: 978-1-119-65642-5 • Jul 2020 • 1360pp • **Previous Edition:** 978-0-470-47908-7

This book differs from other organic chemistry textbooks in that it is directed to all students studying organic chemistry rather than students studying for entry to professional school. It directs the reader to question assumptions rather than to accept what is told. As a consequence, the work is heavily referenced to the original literature of organic chemistry so that the interested students can delve into early thinking about processes and to ask "How and why was that done?" and to explain how what is held as rudimentary or foundational came to be so. In this edition, the author adds discussion of genetic tools like CRISPR and of metal organic frameworks (MOFs) for storage of fuels, capture of carbon dioxide, and catalytic applications.





## Corrosion Inhibitors in the Oil and Gas Industry

Viswanathan S. Saji & Saviour A. Umoren

ISBN: 978-3-527-34618-9 • May 2020 • 464pp

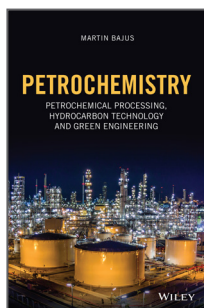
### Provides comprehensive coverage of corrosion inhibitors in the oil and gas industries

Considering the high importance of corrosion inhibitor development for the oil and gas sectors, this book provides a thorough overview of the most recent advancements in this field. It systematically addresses corrosion inhibitors for various applications in the oil and gas value chain, as well as the fundamentals of corrosion inhibition and interference of inhibitors with co-additives.

Corrosion Inhibitors in the Oil and Gas Industries is presented in three parts. The first part on Fundamentals and Approaches focuses on principles and processes in the oil and gas industry, the types of corrosion encountered and their control methods, environmental factors affecting inhibition, material selection strategies, and economic aspects of corrosion. The second part on Choice of Inhibitors examines corrosion inhibitors for acidizing processes, inhibitors for sweet and sour corrosion, inhibitors in refinery operations, high-temperature corrosion inhibitors, inhibitors for challenging corrosive environments, inhibitors for microbiologically influenced corrosion, polymeric inhibitors, vapor phase inhibitors, and smart controlled release inhibitor systems. The last part on Interaction with Co-additives looks at industrial co-additives and their interference with corrosion inhibitors such as antiscalants, hydrate inhibitors, and sulfide scavengers.

- Presents a well-structured and systematic overview of the fundamentals and factors affecting corrosion
- Acts as a handy reference tool for scientists and engineers working with corrosion inhibitors for the oil and gas industries
- Collectively presents all the information available on the development and application of corrosion inhibitors for the oil and gas industries
- Offers a unique and specific focus on the oil and gas industries

Corrosion Inhibitors in the Oil and Gas Industries is an excellent resource for scientists in industry as well as in academia working in the field of corrosion protection for the oil and gas sectors, and will appeal to materials scientists, electrochemists, chemists, and chemical engineers.



## Petrochemistry

Petrochemical Processing, Hydrocarbon Technology and Green Engineering

Martin Bajus

ISBN: 978-1-119-64776-8 • Apr 2020 • 336pp

### A comprehensive textbook on petrochemical conversion processes for petroleum and natural gas fractions as produced by refinery operations

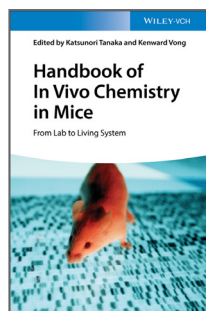
This innovative textbook provides essential links between the chemical sciences and chemical technology, between petrochemistry and hydrocarbon technology. The book brings alive key concepts forming the basis of chemical technology and presents a solid background for innovative process development. In all chapters, the processes described are accompanied by simplified flow schemes, encouraging students to think in terms of conceptual process designs.

*Petrochemistry: Petrochemical Processing, Hydrocarbon Technology and Green Engineering* introduces students to a variety of topics related to the petrochemical industry, hydrocarbon processing, fossil fuel resources, as well as fuels and chemicals conversion. The first chapter covers the fundamentals and principals for designing several of the processes in the book, including discussions on thermodynamics, chemical kinetics, reactor calculations, and industrial catalysts. The following chapters address recent advances in hydrocarbon technology, energy technology, and sources of hydrocarbons. The book then goes on to discuss the petrochemical industry based on four basic pillars, all derived from petroleum and natural gas:

- Production of lower alkenes; other sources of lower alkenes; petrochemicals from  $C_2$ - $C_3$  alkenes
- Production of BTX aromatics; chemicals from BTX aromatics
- $C_1$  technology
- Diversification of petrochemicals

The growing importance of sustainable technology, process intensification and addressing greenhouse gas emissions is reflected throughout the book.

Written for advanced students working in the areas of petrochemistry, hydrocarbon technology, natural gas, energy materials and technologies, alternative fuels, and recycling technologies the book is also a valuable reference for industrial practitioners in the oil and gas industry.



## Handbook of In Vivo Chemistry in Mice From Lab to Living System

Katsunori Tanaka & Kenward Vong

ISBN: 978-3-527-34432-1 • Mar 2020 • 560pp

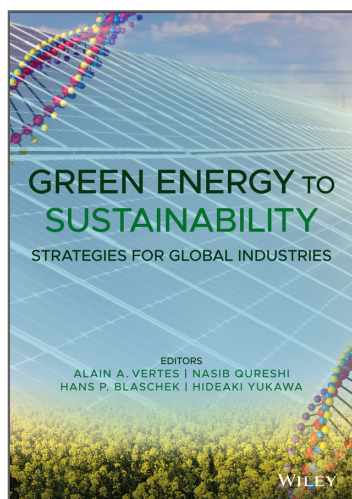
### Provides timely, comprehensive coverage of in vivo chemical reactions within live animals

This handbook summarizes the interdisciplinary expertise of both chemists and biologists performing in vivo chemical reactions within live animals. By comparing and contrasting currently available chemical and biological techniques, it serves not just as a collection of the pioneering work done in animal-based studies, but also as a technical guide to help readers decide which tools are suitable and best for their experimental needs.

The Handbook of In Vivo Chemistry in Mice: From Lab to Living System introduces readers to general information about live animal experiments and detection methods commonly used for these animal models. It focuses on chemistry-based techniques to develop selective in vivo targeting methodologies, as well as strategies for in vivo chemistry and drug release. Topics include: currently available mouse models; biocompatible fluorophores; radionuclides for radiodiagnosis/radiotherapy; live animal imaging techniques such as positron emission tomography (PET) imaging; magnetic resonance imaging (MRI); ultrasound imaging; hybrid imaging; biocompatible chemical reactions; ligand-directed nucleophilic substitution chemistry; biorthogonal prodrug release strategies; and various selective targeting strategies for live animals.

- Completely covers current techniques of in vivo chemistry performed in live animals
- Describes general information about commonly used live animal experiments and detection methods
- Focuses on chemistry-based techniques to develop selective in vivo targeting methodologies, as well as strategies for in vivo chemistry and drug release
- Places emphasis on material properties required for the development of appropriate compounds to be used for imaging and therapeutic purposes in preclinical applications

Handbook of In Vivo Chemistry in Mice: From Lab to Living System will be of great interest to pharmaceutical chemists, life scientists, and organic chemists. It will also appeal to those working in the pharmaceutical and biotechnology industries.



ISBN: 978-1-119-15202-6

May 2020 • 600pp

## Green Energy to Sustainability Strategies for Global Industries



Alain A. Vertes, Nasib Qureshi, Hans P. Blaschek &amp; Hideaki Yukawa

**Reviews the latest advances in biofuel manufacturing technologies and discusses the deployment of other renewable energy for transportation**

Aimed at providing an interface useful to business and scientific managers, this book focuses on the key challenges that still impede the realization of the billion-ton renewable fuels vision. It places great emphasis on a global view of the topic, reviewing deployment and green energy technology in different countries across Africa, Asia, South America, the EU, and the USA. It also integrates scientific, technological, and business development perspectives to highlight the key developments that are necessary for the global replacement of fossil fuels with green energy solutions.

*Green Energy to Sustainability: Strategies for Global Industries* examines the most recent developments in biofuel manufacturing technologies in light of business, financial, value chain, and supply chain concerns. It also covers the use of other renewable energy sources like solar energy for transportation and proposes a view of the challenges over the next two to five decades, and how these will deeply modify the industrial world in the third millennium. The coming of age of electric vehicles is also looked at, as is the impact of their deployment on the biomass to biofuels value chain.

- Offers extensive updates on the field of green energy for global industries
- Covers the structure of the energy business; chemicals and diesel from biomass; ethanol and butanol; hydrogen and methane; and more
- Provides an expanded focus on the next generation of energy technologies
- Reviews the latest advances in biofuel manufacturing technologies
- Integrates scientific, technological and business perspectives
- Highlights important developments needed for replacing fossil fuels with green energy

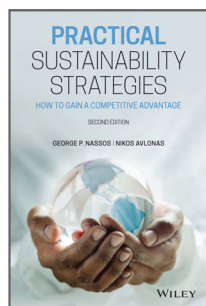
### About the Authors

**Dr Alain Verts** is a Sloan Fellow from London Business School and a microbiologist by training (University of Illinois at Urbana-Champaign, Institut Pasteur Paris, University of Lille Flandres-Artois). He is a strategy and business development consultant and works to enable funding and partnering in biotechnology.

**Dr Nasib Qureshi** is currently a chemical engineer in fermentation and biotechnology at the USDA in Peoria as well as Affiliate Faculty, Institute for Genomic Biology, University of Illinois. He has been honored by Superior Performance Awards at the National Center for Agricultural Utilization Research (USDA) 2004, 2005, 2006.

**Professor H.P. Blaschek**, presently serves as the Director for the Center for Advanced BioEnergy Research, University of Illinois, a campus-based center focused on facilitating research, teaching and outreach in bioenergy systems. He also serves as Assistant Dean, Biobased Research Initiatives in the Office of Research, College of Agricultural, Consumer and Environmental Sciences at the University of Illinois.

**Hideaki Yukawa**, Director, Chief Researcher, Molecular Microbiology and Biotechnology Group, Research Institute of Innovative Technology for the Earth, Kyoto, Japan



## Practical Sustainability Strategies, 2nd Edition

How to Gain a Competitive Advantage

George P. Nassos & Nikos Avlonas

ISBN: 978-1-119-56104-0 • May 2020 • 368pp • **Previous Edition:** 978-1-118-25044-0

**The guide to sustainable strategies and tools to improve competitive business advantage, updated with practical case studies and supporting teaching material**

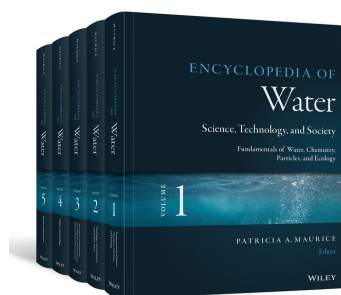
The revised and updated second edition of *Practical Sustainability Strategies* is filled with proven strategies and tools for organizations to integrate sustainability into their business models. Drawing on the authors' research and years of hands-on experience, the book defines strategies that organizations can put in place to develop, extend, or maintain competitive advantage without harming the environment. Additionally, the authors provide tools for measuring and reporting progress and present illustrative case studies that clearly demonstrate the importance of implementing sustainability.

Since the first edition was published in 2013, new strategies, measurements, and certifications have been developed. The book, which is used by several business schools around the globe, has been updated to include these new and effective strategies, including circular economy, the sharing economy, adaptation, resiliency, and strategies to fight climate change. This new edition also highlights the UN Sustainable Development Goals that have been adopted worldwide. This updated second edition:

- Covers new strategies, measuring systems, GRI, STARS and B-Lab certifications
- Offers teaching slides and questions for use in the classroom
- Explores the principles and importance of sustainability
- Examines more than 10 different sustainability strategies
- Presents the economic justification for sustainability with illustrative examples

Written for sustainability managers, ESG professionals, engineers, process designers, policy makers, CEOs, business schools, and others, the second edition of *Practical Sustainability Strategies* offers an updated guide to the most recent strategies and tools that can be put into place to improve competitive advantage, while also providing a positive impact to the community and workplace.





ISBN: 978-1-119-30075-5

Apr 2020 • 2976pp

# Encyclopedia of Water

## Science, Technology, and Society

Patricia Maurice



**A peer reviewed, comprehensive encyclopedia that reflects the current state of water science and engineering from multidisciplinary global viewpoints**

Water quantity and quality are becoming increasingly urgent environmental issues. To meet the growing water demands of our expanding global population, professionals are turning to nontraditional sources and technologies. This expansive, multidisciplinary reference work contains hundreds of articles that reflect the many substantial changes that have occurred in the field of water science. Topics include the hydrologic cycle, nanomaterials and colloids, ecology and microbiology, oceans and coastal processes, ice and glaciers, climate change and sustainability, societal considerations, water and health, and more. This comprehensive work features standalone, authoritative, verifiable, carefully edited, well organized, and accessible content.

Written and peer-reviewed by experts from around the world, *The Encyclopedia of Water: Science, Technology, and Society* comes in five volumes that cover: Fundamentals of Water, Chemistry, Particles, and Ecology; Hydrology, Groundwater, and Surface Water; Atmosphere and Precipitation, Ice and Glaciers, Oceans and Coasts, Soils and Mineral-Water Interface; Water Technology; and Human Dimension. The Encyclopedia:

- Offers a multidisciplinary reference work covering water-related topics at the fundamental and applied levels
- Contains 229 articles on a wide range of subjects, including: Basic Concepts, The Hydrologic Cycle, Water Technology, and Societal Considerations and Special Topics
- Provides carefully edited articles presenting verifiable information and references
- Written and reviewed by a team of global experts

*Encyclopedia of Water* is a must-have reference for all hydrologists, environmental chemists and geochemists, environmental engineers, soil scientists, agriculturists, biologists, health scientists, and ecologists, as well as senior undergraduate and postgraduate students and educators in these areas. It is an important resource for all libraries in universities and colleges, industry, research organizations, and government departments.

### About the Author

**Patricia Maurice** is Professor in the Department of Civil Engineering and Geological Sciences at the University of Notre Dame. She is on the editorial panel of *Environmental Engineering Science*, and sits on the Board of Directors for the Consortium of Universities for the Advancement of Hydrological Sciences.

## New Radio

**New Radio****A Beam-based Air Interface**

Mihai Enescu

ISBN: 978-1-119-58238-0 • May 2020 • 300pp

**A guide to the 3GPP-specified 5G physical layer with a focus on the new beam-based dimension in the radio system**

*5G New Radio: A Beam-based Air Interface* is an authoritative guide to the newly 3GPP-specified 5G physical layer. The contributors—noted experts on the topic and creators of the actual standard—focus on the beam-based operation which is a new dimension in the radio system due to the millimeter wave deployments of 5G. The book contains information that complements the 3GPP specification and helps to connect the dots regarding key features.

The book assumes a basic knowledge of multi-antenna technologies and covers the physical layer aspects related to beam operation, such as initial access, details of reference signal design, beam management, and DL and UL data channel transmission. The contributors also provide a brief overview of standardization efforts, IMT-2020 submission, 5G spectrum, and performance analysis of 5G components. This important text:

- Contains information on the 3GPP-specified 5G physical layer
- Highlights the beam-based operation
- Covers the physical layer aspects related to beam operation
- Includes contributions from experts who created the standard

Written for students and development engineers working with 5G NR, *5G New Radio: A Beam-based Air Interface* offers an expert analysis of the 3GPP-specified 5G physical layer.

**IoT Security****Advances in Authentication**

Madhusanka Liyanage, An Braeken, Pardeep Kumar &amp; Mika Ylianttila

ISBN: 978-1-119-52792-3 • Mar 2020 • 320pp

**An up-to-date guide to an overview of authentication in the Internet of Things (IoT)**

The Internet of things (IoT) is the network of the countless physical devices that have the possibility to connect and exchange data. Among the various security requirements, authentication to the IoT is the first step to prevent the impact of attackers. *IoT Security* offers an important guide into the development of the many authentication mechanisms that provide IoT authentication at various levels such as user level, device level and network level.

The book covers a wide range of topics including an overview of IoT and addresses in detail the security challenges at every layer by considering both the technologies and the architecture used. The authors—noted experts on the topic—provide solutions for remediation of compromised security, as well as methods for risk mitigation, and offer suggestions for prevention and improvement. In addition, *IoT Security* offers a variety of illustrative use cases. This important book:

- Offers an authoritative reference designed for use by all IoT stakeholders
- Includes information for securing devices at the user, device, and network levels
- Contains a classification of existing vulnerabilities
- Written by an international group of experts on the topic
- Provides a guide to the most current information available on IoT security

Written for network operators, cloud operators, IoT device manufacturers, IoT device users, wireless users, IoT standardization organizations, and security solution developers, *IoT Security* is an essential guide that contains information on security features, including underlying networks, architectures, and security requirements.



ISBN: 978-1-119-51481-7

May 2020 • 400pp

## 5G Verticals

### Applications, Technologies and Deployment Techniques in Customizing 5G for Specific Industries

Rath Vannithamby & Anthony Soong



**A comprehensive text to an understanding the next generation mobile broadband and wireless Internet of Things (IoT) technologies**

*5G Verticals* brings together in one comprehensive volume a group of visionaries and technical experts from academia and industry. The expert authors discuss the applications and technologies that comprise 5G verticals. The earlier network generations (2G to 4G) were designed as on-size-fits-all, general-purpose connectivity platforms with limited differentiation capabilities. 5G networks have the capability to demand customizable mobile networks and create an ecosystem for technical and business innovation involving vertical markets such as automotive, healthcare, manufacturing, energy, food and agriculture, city management, government, public transportation, media and more.

5G will serve a large portfolio of applications with various requirements ranging from high reliability to ultra-low latency going through high bandwidth and mobility. In this book, the authors explore applications and usages of various 5G verticals including a set of key metrics for these uses and their corresponding target requirements. The book also examines the potential network architectures and enabling technologies to meet the requirements of 5G verticals. This important book:

- Offers a comprehensive resource to the promise of 5G Verticals
- Provides a set of key metrics for the uses and target requirements
- Contains illustrative examples of the technology and applications
- Includes contributions from experts in the field and professionals that developed the 5G standards
- Provides an analysis of specific vertical industries which have the potential to be among the first industries to use 5G

Written for industry practitioners, engineers and researchers, *5G Verticals* discusses the technology that enables the 5G system to be flexibly deployed and scaled.

#### About the Authors

**Rath Vannithamby** Senior Research Scientist at Intel Corporation, Oregon, USA. Rath Vannithamby received his BS, MS, and PhD degrees in EE from the University of Toronto, Canada. He is a senior research scientist in Intel Labs, USA responsible for 5G research. Previously, he was a researcher at Ericsson, USA. He is a Senior Member of IEEE, and has published over 50 journal/conference papers and has over 200 patents granted/pending.

**Anthony C. K. Soong** received the Ph.D. degree in electrical and computer engineering from the University of Alberta, Canada. Prior to joining Huawei, he was with the systems group for Ericsson Inc and Qualcomm Inc. His research group is actively engaged in the research, development and standardization of the next generation cellular system. His research interests are in statistical signal processing, robust statistics, wireless communications, spread spectrum techniques, multicarrier signaling, multiple antenna techniques, network virtualization, SDN and physiological signal processing. Dr. Soong is a Fellow of the IEEE.



## 5G Technology

### 3GPP New Radio

Harri Holma, Antti Toskala & Takehiro Nakamura

ISBN: 978-1-119-23631-3 • Mar 2020 • 536pp

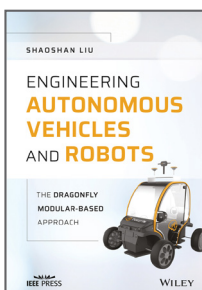
#### A comprehensive guide to 5G technology, applications and potential for the future

5G brings new technology solutions to the 5G mobile networks including new spectrum options, new antenna structures, new physical layer and protocols designs and new network architectures. *5G Technology: 3GPP New Radio* is a comprehensive resource that offers explanations of 5G specifications, performance evaluations, aspects of device design, practical deployment considerations and illustrative examples from field experiences.

With contributions from a panel of international experts on the topic, the book presents the main new technology components in 5G and describes the physical layer, radio protocols and network performance. The authors review the deployment aspects such as site density and transport network and explore the 5G performance aspects including data rates and coverage and latency. The book also contains illustrative examples of practical field measurement. In addition, the book includes the most recent developments in 4G LTE evolution and offers an outlook for the future of the evolution of 5G. This important book:

- Offers an introduction to 5G technology and its applications
- Contains contributions from international experts on the topic
- Reviews the main technology components in 5G
- Includes information on the optimisation of the Internet of things
- Presents illustrative examples of practical field measurements

Written for students and scientists interested in 5G technology, *5G Technology: 3GPP New Radio* provides a clear understanding of the underlying 5G technology that promotes the opportunity to take full benefit of new capabilities.



## Engineering Autonomous Vehicles and Robots

### The DragonFly Modular-based Approach

Shaoshan Liu

Series: Wiley – IEEE • ISBN: 978-1-119-57056-1 • Jul 2020 • 250pp

#### Offers a step-by-step guide to building autonomous vehicles and robots, with source code and accompanying videos

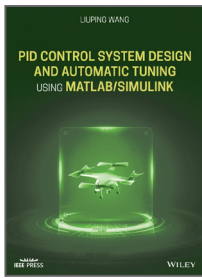
The first book of its kind on the detailed steps for creating an autonomous vehicle or robot, this book provides an overview of the technology and introduction of the key elements involved in developing autonomous vehicles, and offers an excellent introduction to the basics for someone new to the topic of autonomous vehicles and the innovative, modular-based engineering approach called DragonFly.

*Engineering Autonomous Vehicles and Robots: The DragonFly Modular-based Approach* covers everything that technical professionals need to know about: CAN bus, chassis, sonars, radars, GNSS, computer vision, localization, perception, motion planning, and more. Particularly, it covers Computer Vision for active perception *and* localization, as well as mapping and motion planning. The book offers several case studies on the building of an autonomous passenger pod, bus, and vending robot. It features a large amount of supplementary material, including the standard protocol and sample codes for chassis, sonar, and radar. GPSSD protocol/NMEA protocol and GPS deployment methods are also provided. Most importantly, readers will learn the philosophy behind the DragonFly modular-based design approach, which empowers readers to design and build their own autonomous vehicles and robots with flexibility and affordability.

- Offers progressive guidance on building autonomous vehicles and robots
- Provides detailed steps and codes to create an autonomous machine, at affordable cost, and with a modular approach
- Written by one of the pioneers in the field building autonomous vehicles
- Includes case studies, source code, and state-of-the art research results
- Accompanied by a website with supplementary material, including sample code for chassis/sonar/radar; GPS deployment methods; Vision Calibration methods

*Engineering Autonomous Vehicles and Robots* is an excellent book for students, researchers, and practitioners in the field of autonomous vehicles and robots.





## PID and State Space Control Systems

Design and Implementation using MATLAB/Simulink

Liuping Wang

Series: Wiley – IEEE • ISBN: 978-1-119-46934-6 • Mar 2020 • 368pp

### Covers PID control systems from the very basics to the advanced topics

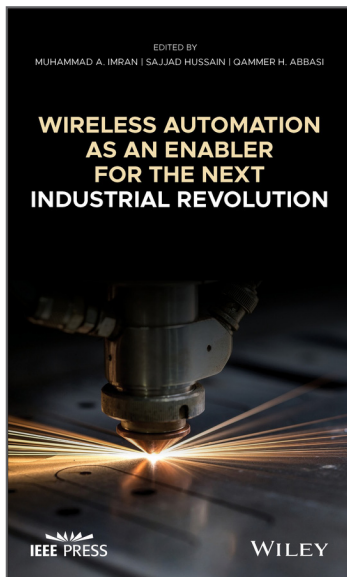
This book covers the design, implementation and automatic tuning of PID control systems with operational constraints. It provides students, researchers, and industrial practitioners with everything they need to know about PID control systems—from classical tuning rules and model-based design to constraints, automatic tuning, cascade control, and gain scheduled control.

*PID Control System Design and Automatic Tuning using MATLAB/Simulink* introduces PID control system structures, sensitivity analysis, PID control design, implementation with constraints, disturbance observer-based PID control, gain scheduled PID control systems, cascade PID control systems, PID control design for complex systems, automatic tuning and applications of PID control to unmanned aerial vehicles. It also presents resonant control systems relevant to many engineering applications. The implementation of PID control and resonant control highlights how to deal with operational constraints.

Provides unique coverage of PID Control of unmanned aerial vehicles (UAVs), including mathematical models of multi-rotor UAVs, control strategies of UAVs, and automatic tuning of PID controllers for UAVs

- Provides detailed descriptions of automatic tuning of PID control systems, including relay feedback control systems, frequency response estimation, Monte-Carlo simulation studies, PID controller design using frequency domain information, and MATLAB/Simulink simulation and implementation programs for automatic tuning
- Includes 15 MATLAB/Simulink tutorials, in a step-by-step manner, to illustrate the design, simulation, implementation and automatic tuning of PID control systems
- Assists lecturers, teaching assistants, students, and other readers to learn PID control with constraints and apply the control theory to various areas.
- Accompanying website includes lecture slides and MATLAB/ Simulink programs

*PID Control System Design and Automatic Tuning using MATLAB/Simulink* is intended for undergraduate electrical, chemical, mechanical, and aerospace engineering students, and will greatly benefit postgraduate students, researchers, and industrial personnel who work with control systems and their applications.



**Series:** Wiley – IEEE

**ISBN:** 978-1-119-55261-1

Mar 2020 • 288pp

# Wireless Automation as an Enabler for the Next Industrial Revolution



Muhammad A. Imran, Sajjad Hussain & Qammer H. Abbasi

**Presents the components, challenges, and solutions of wireless automation as enablers for industry 4.0**

This timely book introduces the state of the art in industrial automation techniques, concentrating on wireless methods for a variety of applications, ranging from simple smart homes to heavy-duty complex industrial setting with robotics accessibility. It covers a wide range of topics including the industrial revolution enablers, applications, challenges, their possible solutions, and future directions.

*Wireless Automation as an Enabler for the Next Industrial Revolution* opens with an introduction to wireless sensor networks and their applications in various domains, emphasizing industrial wireless networks and their future uses. It then takes a look at life-span extension for sensor networks in the industry, followed by a chapter on multiple access and resource sharing for low latency critical industrial networks. Industrial automation is covered next, as is the subject of ultra reliable low latency communications. Other topics include: self healing in wireless networks; cost efficiency optimization for industrial automation; a non event-based approach for non-intrusive load monitoring; wireless networked control; and caching at the edge in low latency wireless networks. The book finishes with a chapter on the application of terahertz sensing at nano-scale for precision agriculture.

- Introduces the future evolving dimension in industrial automation and discusses the enablers of the industrial revolution
- Places particular emphasis on wireless communication techniques which make industrial automation reliable, efficient, and cost-effective
- Covers many of the associated topics and concepts like robotics, AI, internet-of-things, telesurgery, and remote manufacturing
- Of great interest to researchers from academia and industry who are looking at the industrial development from various perspectives

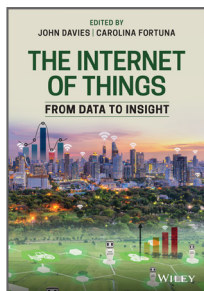
*Wireless Automation as an Enabler for the Next Industrial Revolution* is an excellent book for telecom engineers, IoT experts, and industry professionals. It would also greatly benefit researchers, professors, and doctorate and postgraduate students involved in automation and industry 4.0.

## About the Authors

**Muhammad Ali Imran**, PhD, is Professor of Communication Systems at the James Watt School of Engineering and the Vice Dean at Glasgow College UESTC in at the University of Glasgow. He is also an Affiliate Professor at the University of Oklahoma, USA and a visiting Professor at 5G Innovation Centre, University of Surrey, UK.

**Sajjad Hussain**, PhD, is an Assistant Professor at the University of Glasgow in the James Watt School of Engineering, UK. Dr. Hussain is an IEEE Senior Member and Senior Fellow Higher Education Academy.

**Qammer H. Abbasi**, PhD, is an Assistant Professor at the University of Glasgow in the James Watt School of Engineering in addition to visiting Assistant Professor with Queen Mary University of London. Dr. Abbasi is an IEEE Senior Member and URSI Young Scientist Award winner.



## The Internet of Things

### From Data to Insight

John N.J. Davies & Carolina Fortuna

ISBN: 978-1-119-54526-2 • May 2020 • 270pp

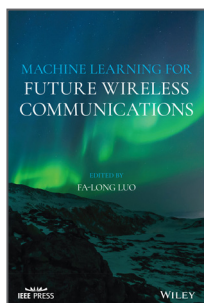
**Provides comprehensive coverage of the current state of IoT, focusing on data processing infrastructure and techniques**

Written by experts in the field, this book addresses the IoT technology stack, from connectivity through data platforms to end-user case studies, and considers the tradeoffs between business needs and data security and privacy throughout. There is a particular emphasis on data processing technologies that enable the extraction of actionable insights from data to inform improved decision making. These include artificial intelligence techniques such as stream processing, deep learning and knowledge graphs, as well as data interoperability and the key aspects of privacy, security and trust. Additional aspects covered include: creating and supporting IoT ecosystems; edge computing; data mining of sensor datasets; and crowd-sourcing, amongst others. The book also presents several sections featuring use cases across a range of application areas such as smart energy, transportation, smart factories, and more. The book concludes with a chapter on key considerations when deploying IoT technologies in the enterprise, followed by a brief review of future research directions and challenges.

*The Internet of Things: From Data to Insight*

- Provides a comprehensive overview of the Internet of Things technology stack with focus on data driven aspects from data modelling and processing to presentation for decision making
- Explains how IoT technology is applied in practice and the benefits being delivered.
- Acquaints readers that are new to the area with concepts, components, technologies, and verticals related to and enabled by IoT
- Gives IoT specialists a deeper insight into data and decision-making aspects as well as novel technologies and application areas
- Analyzes and presents important emerging technologies for the IoT arena
- Shows how different objects and devices can be connected to decision making processes at various levels of abstraction

*The Internet of Things: From Data to Insight* will appeal to a wide audience, including IT and network specialists seeking a broad and complete understanding of IoT, CIOs and CIO teams, researchers in IoT and related fields, final year undergraduates, graduate students, post-graduates, and IT and science media professionals.



## Machine Learning for Future Wireless Communications

Fa-Long Luo

Series: Wiley – IEEE • ISBN: 978-1-119-56225-2 • Mar 2020 • 496pp

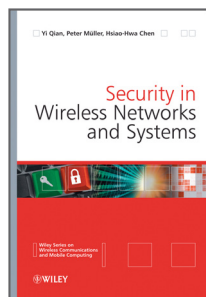
**A comprehensive review to the theory, application and research of machine learning for future wireless communications**

In one single volume, *Machine Learning for Future Wireless Communications* provides a comprehensive and highly accessible treatment to the theory, applications and current research developments to the technology aspects related to machine learning for wireless communications and networks. The technology development of machine learning for wireless communications has grown explosively and is one of the biggest trends in related academic, research and industry communities.

Deep neural networks-based machine learning technology is a promising tool to attack the big challenge in wireless communications and networks imposed by the increasing demands in terms of capacity, coverage, latency, efficiency flexibility, compatibility, quality of experience and silicon convergence. The author – a noted expert on the topic – covers a wide range of topics including system architecture and optimization, physical-layer and cross-layer processing, air interface and protocol design, beamforming and antenna configuration, network coding and slicing, cell acquisition and handover, scheduling and rate adaption, radio access control, smart proactive caching and adaptive resource allocations. Uniquely organized into three categories: Spectrum Intelligence, Transmission Intelligence and Network Intelligence, this important resource:

- Offers a comprehensive review of the theory, applications and current developments of machine learning for wireless communications and networks
- Covers a range of topics from architecture and optimization to adaptive resource allocations
- Reviews state-of-the-art machine learning based solutions for network coverage
- Includes an overview of the applications of machine learning algorithms in future wireless networks
- Explores flexible backhaul and front-haul, cross-layer optimization and coding, full-duplex radio, digital front-end (DFE) and radio-frequency (RF) processing

Written for professional engineers, researchers, scientists, manufacturers, network operators, software developers and graduate students, *Machine Learning for Future Wireless Communications* presents in 21 chapters a comprehensive review of the topic authored by an expert in the field.

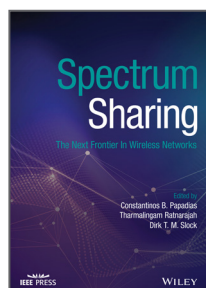


## Security in Wireless Networks and Systems

Yi Qian, Peter Muller & Hsiao-Hwa Chen

**Series:** Wireless Communications and Mobile Computing • **ISBN:** 978-0-470-51212-8 • Mar 2020 • 600pp

This book comprehensively addresses the issues currently faced in wireless networks and systems. Special attention is paid to wireless specific issues, such as tradeoffs between security and power consumption, adaptively changing security protocols in response to the radio channel. Wireless infrastructure networks (e.g., GSM and 3G Cellular), wireless ad hoc and sensor networks, and hybrid wireless networks are used as examples and case studies throughout the book for wireless security. The book is divided into three parts: Wireless Security Techniques; Security for Emerging Wireless Networks and Systems; and The Future.



## Spectrum Sharing

The Next Frontier in Wireless Networks

Tharmalingam Ratnarajah, Constantinos B. Papadias & Dirk T. M. Slock

**Series:** Wiley – IEEE • **ISBN:** 978-1-119-55149-2 • Jun 2020 • 456pp

**Combines the latest trends in spectrum sharing, both from a research and a standards/regulation/experimental standpoint**

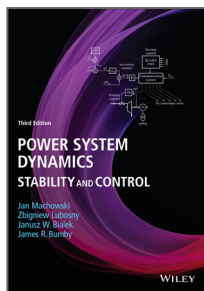
Written by noted professionals from academia, industry, and research labs, this unique book provides a comprehensive treatment of the principles and architectures for spectrum sharing in order to help with the existing and future spectrum crunch issues. It presents readers with the most current standardization trends, including CEPT / CEE, eLSA, CBRS, MulteFire, LTE-Unlicensed (LTE-U), LTE WLAN integration with Internet Protocol security tunnel (LWIP), and LTE/Wi-Fi aggregation (LWA), and offers substantial trials and experimental results, as well as system-level performance evaluation results. The book also includes a chapter focusing on spectrum policy reinforcement and another on the economics of spectrum sharing.

Beginning with the historic form of cognitive radio, *Spectrum Sharing: The Next Frontier in Wireless Networks* continues with current standardized forms of spectrum sharing, and reviews all of the technical ingredients that may arise in spectrum sharing approaches. It also looks at policy and implementation aspects and ponders the future of the field. White spaces and data base-assisted spectrum sharing are discussed, as well as the licensed shared access approach and cooperative communication techniques. The book also covers reciprocity-based beam forming techniques for spectrum sharing in MIMO networks; resource allocation for shared spectrum networks; large scale wireless spectrum monitoring; and much more.

- Contains all the latest standardization trends, such as CEPT / ECC, eLSA, CBRS, MulteFire, LTE-Unlicensed (LTE-U), LTE WLAN integration with Internet Protocol security tunnel (LWIP) and LTE/Wi-Fi aggregation (LWA)
- Presents a number of emerging technologies for future spectrum sharing (collaborative sensing, cooperative communication, reciprocity-based beamforming, etc.), as well as novel spectrum sharing paradigms (e.g. in full duplex and radar systems)
- Includes substantial trials and experimental results, as well as system-level performance evaluation results
- Contains a dedicated chapter on spectrum policy reinforcement and one on the economics of spectrum sharing
- Edited by experts in the field, and featuring contributions by respected professionals in the field world wide

*Spectrum Sharing: The Next Frontier in Wireless Networks* is highly recommended for graduate students and researchers working in the areas of wireless communications and signal processing engineering. It would also benefit radio communications engineers and practitioners.





### Power System Dynamics, 3rd Edition

#### Stability and Control

Jan Machowski, Zbigniew Lubosny, Janusz W. Bialek & James R Bumby

ISBN: 978-1-119-52634-6 • May 2020 • 832pp • **Previous Edition:** 978-0-470-72558-0, 978-1-119-96506-0

**Previous Editions Licensed in Simplified Chinese**

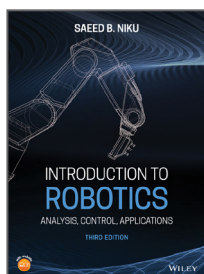
#### An authoritative guide to the most up-to-date information on power system dynamics

The revised third edition of *Power System Dynamics and Stability* contains a comprehensive, state-of-the-art review of information on the topic. The third edition continues the successful approach of the first and second editions by progressing from simplicity to complexity. It places the emphasis first on understanding the underlying physical principles before proceeding to more complex models and algorithms. The book is illustrated by a large number of diagrams and examples.

The third edition of *Power System Dynamics and Stability* explores the influence of wind farms and virtual power plants, power plants inertia and control strategy on power system stability. The authors—noted experts on the topic—cover a range of new and expanded topics including:

- Wide-area monitoring and control systems.
- Improvement of power system stability by optimization of control systems parameters.
- Impact of renewable energy sources on power system dynamics.
- The role of power system stability in planning of power system operation and transmission network expansion.
- Real regulators of synchronous generators and field tests.
- Selectivity of power system protections at power swings in power system.
- Criteria for switching operations in transmission networks.
- Influence of automatic control of a tap changing step-up transformer on the power capability area of the generating unit.
- Mathematical models of power system components such as HVDC links, wind and photovoltaic power plants.
- Data of sample (benchmark) test systems.

*Power System Dynamics: Stability and Control, Third Edition* is an essential resource for students of electrical engineering and for practicing engineers and researchers who need the most current information available on the topic.



### Introduction to Robotics, 3rd Edition

#### Analysis, Control, Applications

Saeed B. Niku

ISBN: 978-1-119-52762-6 • Mar 2020 • 528pp

**Previous Editions Licensed in Portuguese, Simplified Chinese**

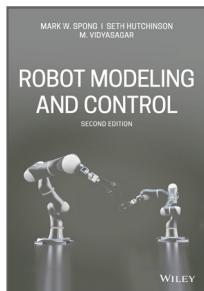
#### The revised text to the analysis, control, and applications of robotics

The revised and updated third edition of *Introduction to Robotics: Analysis, Control, Applications*, offers a guide to the fundamentals of robotics, robot components and subsystems and applications. The author—a noted expert on the topic—covers the mechanics and kinematics of serial and parallel robots, both with the Denavit-Hartenberg approach as well as screw-based mechanics. In addition, the text contains information on microprocessor applications, control systems, vision systems, sensors, and actuators.

*Introduction to Robotics* gives engineering students and practicing engineers the information needed to design a robot, to integrate a robot in appropriate applications, or to analyze a robot. The updated third edition contains many new subjects and the content has been streamlined throughout the text. The new edition includes two completely new chapters on screw-based mechanics and parallel robots. The book is filled with many new illustrative examples and includes homework problems designed to enhance learning. This important text:

- Offers a revised and updated guide to the fundamental of robotics
- Contains information on robot components, robot characteristics, robot languages, and robotic applications
- Covers the kinematics of serial robots with Denavit-Hartenberg methodology and screw-based mechanics
- Includes the fundamentals of control engineering, including analysis and design tools
- Discusses kinematics of parallel robots

Written for students of engineering as well as practicing engineers, *Introduction to Robotics, Third Edition* reviews the basics of robotics, robot components and subsystems, applications, and has been revised to include the most recent developments in the field.



## Robot Modeling and Control, 2nd Edition

Mark W. Spong, Seth Hutchinson & M. Vidyasagar

ISBN: 978-1-119-52399-4 • May 2020 • 650pp

Previous Editions Licensed in Simplified Chinese

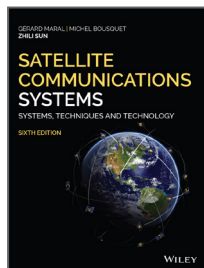
### A New Edition Featuring Case Studies and Examples of the Fundamentals of Robot Kinematics, Dynamics, and Control

In the 2nd Edition of *Robot Modeling and Control*, students will cover the theoretical fundamentals and the latest technological advances in robot kinematics. With so much advancement in technology, from robotics to motion planning, society can implement more powerful and dynamic algorithms than ever before. This in-depth reference guide educates readers in four distinct parts; the first two serve as a guide to the fundamentals of robotics and motion control, while the last two dive more in-depth into control theory and nonlinear system analysis.

With the new edition, readers gain access to new case studies and thoroughly researched information covering topics such as:

A four-part reference essential for both undergraduate and graduate students, *Robot Modeling and Control* serves as a foundation for a solid education in robotics and motion planning.

## ELECTRICAL & ELECTRONIC ENGINEERING – SATELLITE COMMUNICATIONS



## Satellite Communications Systems, 6th Edition

Systems, Techniques and Technology

Gerard Maral, Michel Bousquet & Zhili Sun

ISBN: 978-1-119-38208-9 • Apr 2020 • 792pp • Previous Edition: 978-0-470-71458-4

The revised and updated sixth edition of *Satellite Communications Systems* contains information on the most recent advances related to satellite communications systems, technologies, network architectures and new requirements of services and applications. The authors – noted experts on the topic – cover the state-of-the-art satellite communication systems and technologies and examine the relevant topics concerning communication and network technologies, concepts, techniques and algorithms. New to this edition is information on internetworking with the broadband satellite systems, more intensive coverage of Ka band technologies, GEO high throughput satellite (HTS), LEO constellations and the potential to support the current new broadband Internet services as well as future developments for global information infrastructure.

The authors offer details on digital communication systems and broadband networks in order to provide high-level researchers and professional engineers an authoritative reference. The companion website provides slides for instructors to teach and for students to learn. In addition, the book is designed in a user-friendly format.

## Optimization of Smart Grid Design, Operations, and Management

**Series:** Wiley – IEEE

**ISBN:** 978-1-119-31533-9

Mar 2020 • 650pp

# Optimization of Smart Grid Design, Operations, and Management



Suleyman Uludag, Tolga Girici, Hakan Gultekin & Bulent Tavli

In the Smart Grid (SG), generation, distribution, pricing, utilization, and storage of electrical energy are handled in a distributed, integrated, reliable, efficient, and sustainable fashion by multiple coordinated parties. Almost all aspects of this global “Energy and Information Internet” are envisioned to be optimized so that the targeted enhancements over the traditional electric grid can be fulfilled to the fullest extent possible. Considering each of these constituents in optimization requires a sufficiently detailed mathematical model, which is the starting point of an optimization process, and a wide array of optimization techniques are utilized for solving various optimization problems in Smart Grid. This timely book introduces the fundamentals of smart grid concepts, the pillars of mathematical programming-based optimization, modeling Smart Grid problems as optimization models, and optimization techniques for different modeling purposes and constraints. With the proliferation of the deployment of SG enabling technologies, there is a need for a workforce that is familiar with the latest fundamental developments in the field of SG and microgrid optimization. The book will also be useful in academia for faculty, researchers, and students as a primary textbook for SG demand response.

## About the Authors

**Suleyman Uludag**, Associate Professor, The University of Michigan - Flint, Ann Arbor, USA. Suleyman has been working in the area of Smart Grid for the past 5 years. He has been awarded a Teaching Excellence Award by the University of Michigan - Flint in 2010. He has published several survey type papers and delivered 7 tutorials on conferences on Smart Grid. He has several papers in progress on topics related to the book's theme.

**Tolga Girici**, Associate Professor, TOBB University of Economics and Technology, Ankara, Turkey. Tolga received his Ph.D. degree from University of Maryland, College Park USA in 2007.. He has previously worked as an Intern at Intelligent Automation Inc. at Bethesda MD, and Fujitsu Labs, College Park, MD USA. He has served in the TPC of many networking conferences such as ICC, Globecom, PIMRC and WCNC, and reviewer for many networking journals. His research interests include Next Generation Wireless Communications, LTE, Wireless Ad Hoc Networks and Tactical Communications.

**Hakan Gultekin**, Associate Professor, TOBB University of Economics and Technology, Ankara, Turkey. Hakan received his M.S. and Ph.D. degrees in Industrial Engineering from Bilkent University in Turkey. Before joining TOBB ETU he visited the University of Liege in Belgium for postdoctoral studies. His research interests include scheduling, optimization modeling and exact and heuristic algorithm development especially for the problems arising in modern manufacturing systems, wireless sensor networks and energy management. He has several journal and conference papers on these topics.

**Bulent Tavli**, Professor, TOBB University of Economics and Technology, Ankara, Turkey. Bulent received M.Sc. and Ph.D. degrees in Electrical & Computer Engineering in 2001 and 2005 from the University of Rochester, Rochester, NY, USA. Smart grid, information security, telecommunications, mathematical programming, and embedded systems are his current research areas. He has been working in the area of Smart Grid for the past two years and on modeling, analysis, and optimization of engineering systems for more than ten years.

## Introduction to Energy Technology

ISBN: 978-3-527-33241-0

Jun 2020 • 850pp

# Introduction to Energy Technology Depletable and Renewable



Michael J. Aziz & Alexander C. Johnson

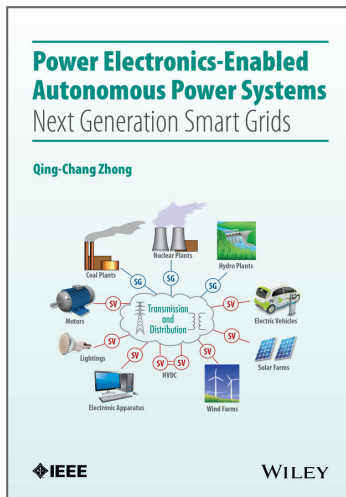
Using an intelligible language and a clear structure for fast learning and self-study, this illustrative textbook contains a wealth of figures printed in full color throughout to enhance the reading experience. Starting with the basics about the earth's energy system, the scale of the human energy challenge and a section on thermodynamics and electricity, the book goes on to explain conventional and renewable energy technologies in detail. Chapters on energy generation are followed by a discussion on energy storage and end-use technologies, such as fuel cells and transportation as well as energy use in industry and buildings. A chapter on the advantages and disadvantages of all energy technologies rounds off the book.

## About the Authors

**Michael J. Aziz** received a Ph.D. in Applied Physics from Harvard in 1983. He has been a member of the faculty at what is now the Harvard School of Engineering and Applied Sciences since he joined in 1986 and is now Gene and Tracy Sykes Professor of Materials and Energy Technologies. Aziz has made significant contributions to a number of fields in applied physics and materials science. He is a Fellow of the American Physical Society, the American Association for the Advancement of Science, and the Materials Research Society. He is the Faculty Coordinator for Harvard's University-Wide Graduate Consortium on Energy and Environment, for which he developed a popular course on Energy Technology for a broad audience. Among his research interests are novel materials and processes for energy technology and greenhouse gas mitigation.

**Alexander C. Johnson** received a Ph.D. in Physics from Harvard in 2005 and was an Environmental Postdoctoral Fellow for the Harvard University Center for the Environment in 2006-2008. In 2008-2009, as a Lecturer on Engineering Sciences he co-developed a popular course on Energy Technology for a broad audience with Michael Aziz. In his short career he has published over a dozen papers in physics, applied physics, materials science, and energy technology, including on thin film solid oxide fuel cells. He is currently a process engineer for Alion, Inc., a startup thin-film photovoltaics company in Richmond, California.





**Series:** Wiley – IEEE

**ISBN:** 978-1-118-80352-3

Jun 2020 • 250pp

# Power Electronics-Enabled Autonomous Power Systems

## Next Generation Smart Grids

Qing-Chang Zhong

**Provides a holistic grid architecture and enabling technologies for next-generation smart grid**

Power systems worldwide are going through a paradigm shift from centralized generation to distributed generation. This book presents the SYNDEM (i.e., synchronized and democratized) grid architecture and its technical routes to harmonize the integration of renewable energy sources, electric vehicles, storage systems, and flexible loads, with the synchronization mechanism of synchronous machines, to enable autonomous operation of power systems, and to promote energy freedom.

This is a game changer for the grid. It is the sort of breakthrough like the touch screen in smart phones ? that helps to push an industry from one era to the next, as reported by Keith Schneider, a New York Times correspondent since 1982.

This book contains an introductory chapter and additional 24 chapters in five parts: Theoretical Framework, First-Generation VSM (virtual synchronous machines), Second-Generation VSM, Third-Generation VSM, and Case Studies. Most of the chapters include experimental results.

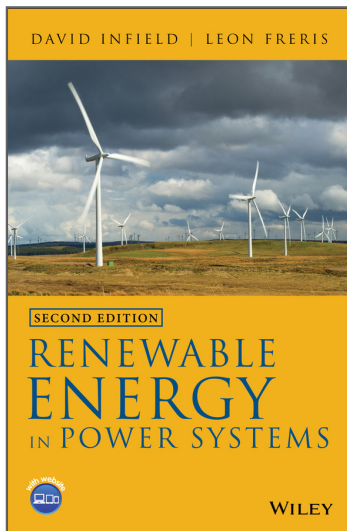
As the first book of its kind for power electronics-enabled autonomous power systems, it

- introduces a holistic architecture applicable to both large and small power systems, including aircraft power systems, ship power systems, microgrids, and supergrids.
- provides latest research to address the unprecedented challenges faced by power systems and to enhance grid stability, reliability, security, resiliency, and sustainability
- demonstrates how future power systems achieve harmonious interaction, prevent local faults from cascading into wide-area blackouts, and operate autonomously with minimized cyber-attacks
- highlights the significance of the SYNDEM concept
- for power systems and beyond

Power Electronics-Enabled Autonomous Power Systems is an excellent book for researchers, engineerings, and students involved in energy and power systems, electrical and control engineering, and power electronics. The SYNDEM theoretical framework chapter is also suitable for policy makers, legislators, entrepreneurs, commissioners of utility commissions, energy and environmental agency staff, utility personnel, investors, consultants, and attorneys.

### About the Author

**Dr Qing-Chang Zhong**, Department of Automatic Control and Systems Engineering, The University of Sheffield, UK Dr Zhong has been working in the area of control for more than 20 years, in the area of power electronics for ten and in renewable energy for five. He has made significant contributions to these areas and has established a team of ten researchers, working on power electronics and renewable energy, with funding from various sources including Rolls Royce and Texas Instruments. He has set up a well-equipped research lab, having a few inverters with different power ratings for different applications. Dr Zhong has been Senior Lecturer at the Department of Electrical Engineering and Electronics, University of Liverpool, since August 2005. He is currently a Senior Research Fellow of the Royal Academy of Engineering and Leverhulme Trust, as well as a Senior Member of IEEE, and a member of IET and UKACC. He has been working to establish the framework and technical route for completely autonomous power systems since 2003.



ISBN: 978-1-118-64993-0

**Previous Edition:**  
978-0-470-01749-4

Mar 2020 • 352pp

# Renewable Energy in Power Systems, 2nd Edition

David Infield & Leon Freris



**An up to date account of renewable sources of electricity generation and their integration into power systems**

With the growth in installed capacity of renewable energy (RE) generation, many countries such as the UK are relying on higher levels of RE generation to meet targets for reduced greenhouse gas emissions. In the face of this, the integration issue is now of increasing concern, in particular to system operators.

This updated text describes the individual renewable technologies and their power generation characteristics alongside an expanded introduction to power systems and the challenges posed by high levels of penetrations from such technologies, together with an account of technologies and changes to system operation that can ease RE integration.

Features of this edition:

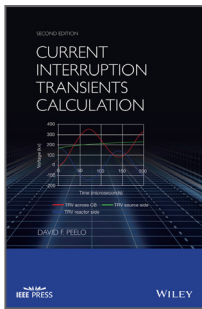
- Covers power conditioning, the characteristics of RE generators, with emphasis on their time varying nature, and the use of power electronics in interfacing RE sources to grids
- Outlines up to date RE integration issues such as power flow in networks supplied from a combination of conventional and renewable energy sources
- Updated coverage of the economics of power generation and the role of markets in delivering investment in sustainable solutions
- Considers the challenge of maintaining power balance in a system with increasing RE input, including recent moves toward power system frequency support from RE sources
- Offers an insightful perspective on the shape of future power systems including offshore networks and demand side management
- Includes worked examples that enhance this edition's suitability as a textbook for introductory courses in RE systems technology

Firmly established as an essential reference, the Second Edition of *Renewable Energy in Power Systems* will prove a real asset to engineers and others involved in both the traditional power and fast growing renewables sector. This text should also be of particular benefit to students of electrical power engineering and will additionally appeal to non-specialists through the inclusion of background material covering the basics of electricity generation.

## About the Authors

**Professor David Infield**, University of Strathclyde, Glasgow, Scotland, UK Professor David Infield was the joint founding member of CREST, and the Center's first Director. He is a professor in Renewable Energy in the Department of Electronic and Electrical Engineering at the University of Strathclyde. He represents the UK in a range of international expert committees. His present research is focused on the integration of wind and solar energy into electrical power systems. He is a senior member of the Institute of Physics and of the IEEE and Editor-in-Chief of IET Renewable Power Generation.

**Professor Leon Freris**, CREST, Loughborough University, Leicestershire, UK Professor Leon Freris is the visiting professor in Renewable Energy Technology in the Center for Renewable Energy Systems Technology (CREST) at Loughborough University. Professor Freris has over 20 years of teaching experience on a variety of topics related to wind power and integration of renewables.



## Current Interruption Transients Calculation, 2nd Edition

David F. Peel

**Series:** Wiley – IEEE • **ISBN:** 978-1-119-54721-1 • Mar 2020 • 296pp • **Previous Edition:** 978-1-118-60047-4

**Previous Editions Licensed in Simplified Chinese**

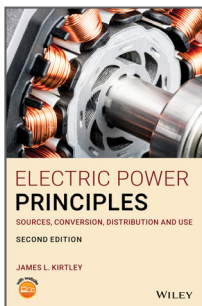
**Provides an original, detailed, and practical description of current interruption transients, origins, and the circuits involved, and shows how they can be calculated**

Based on a course that has been presented by the author worldwide, this book teaches readers all about interruption transients calculation—showing how they can be calculated using only a hand calculator and Excel. It covers all the current interruption cases that occur on a power system and relates oscillatory circuit (transients) and symmetrical component theory to the practical calculation of current interruption transients as applied to circuit breaker application. The book explains all cases first in theory, and then illustrates them with practical examples.

Topics featured in *Current Interruption Transients Calculation, Second Edition* include: RLC Circuits; Pole Factor Calculation; Terminal Faults; Short Line Faults; Inductive Load Switching; and Capacitive Load Switching. The book also features numerous appendices that cover: Differential Equations; Principle of Duality; Useful Formulae; Euler's Formula; Asymmetrical Current-Calculating Areas Under Curves; Shunt Reactor Switching; and Generator Circuit Breaker TRVs.

- Offers a clear explanation of how to calculate transients without the use of specialist software, showing how four basic circuits can represent all transients
- Describes every possible current interruption case that can arise on a power system, explaining them through theory and practical examples
- Analyses oscillatory circuit (transients) and symmetrical component theory in detail
- Takes a practical approach to the subject so engineers can use the knowledge in circuit breaker applications

*Current Interruption Transients Calculation, Second Edition* is an ideal book for power electrical engineers, as well as transmission and distribution staff in the areas of planning and system studies, switchgear application, specification and testing, and commissioning and system operation.



## Electric Power Principles, 2nd Edition

Sources, Conversion, Distribution and Use

James L. Kirtley

**ISBN:** 978-1-119-58517-6 • Apr 2020 • 424pp • **Previous Edition:** 978-0-470-68636-2

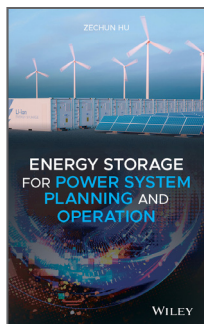
**A revised and updated text that explores the fundamentals of the physics of electric power handling systems**

The revised and updated second edition of *Electric Power Principles: Sources, Conversion, Distribution and Use* offers an innovative and comprehensive approach to the fundamentals of electric power. The author – a noted expert on the topic – provides a thorough grounding in electric power systems, with an informative discussion on per-unit normalisations, symmetrical components and iterative load flow calculations. The text covers the most important topics within the power system, such as protection and DC transmission, and examines both traditional power plants and those used for extracting sustainable energy from wind and sunlight.

The text explores the principles of electromechanical energy conversion and magnetic circuits and synchronous machines – the most important generators of electric power. The book also contains information on power electronics, induction and direct current motors. This new second edition includes:

- A new chapter on energy storage, including battery modeling and how energy storage and associated power electronics can be used to modify system dynamics
- Information on voltage stability and bifurcation
- The addition of Newton's Method for load flow calculations
- Material on the grounding transformer connections added to the section on three phase transformer
- An example of the unified power flow controller for voltage support

Written for students studying electric power systems and electrical engineering, the updated second edition of *Electric Power Principles: Sources, Conversion, Distribution and Use* is the classroom-tested text that offers an understanding of the basics of the physics of electric power handling systems.



## Energy Storage for Power System Planning and Operation

Zechun Hu

ISBN: 978-1-119-18908-4 • May 2020 • 248pp

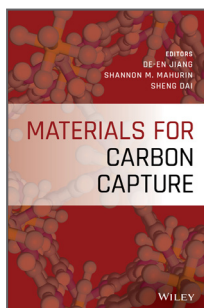
### An authoritative guide to large-scale energy storage technologies and applications for power system planning and operation

To reduce the dependence on fossil energy, renewable energy generation (represented by wind power and photovoltaic power generation) is a growing field worldwide. *Energy Storage for Power System Planning and Operation* offers an authoritative introduction to the rapidly evolving field of energy storage systems. Written by a noted expert on the topic, the book outlines a valuable framework for understanding the existing and most recent advances in technologies for integrating energy storage applications with power systems.

Filled with full-color illustrations, the book reviews the state-of-the-art of energy storage systems and includes illustrative system models and simulations. The author explores the various techniques that can be employed for energy storage that is compatible with renewable energy generation. Designed as a practical resource, the book examines in detail the aspects of system optimization, planning, and dispatch. This important book,

- Provides an introduction to the systematically different energy storage techniques with deployment potential in power systems
- Models various energy storage systems for mathematical formulation and simulations
- Contains a review of the techniques for integrating and operating energy storage with renewable energy generation
- Analyses how to optimize power systems with energy storage, at both the transmission and distribution system levels
- Shows how to optimize planning, siting, and sizing of energy storage for a range of purposes

Written for power system engineers and researchers, *Energy Storage for Power System Planning and Operation* introduces the application of large-scale energy storage for the optimal operation and planning of power systems.



## Materials for Carbon Capture

De-en Jiang, Shannon M. Mahurin & Sheng Dai

ISBN: 978-1-119-09117-2 • Mar 2020 • 376pp

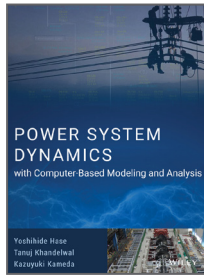
### Covers a wide range of advanced materials and technologies for CO<sub>2</sub> capture

As a frontier research area, carbon capture has been a major driving force behind many materials technologies. This book highlights the current state-of-the-art in materials for carbon capture, providing a comprehensive understanding of separations ranging from solid sorbents to liquid sorbents and membranes. Filled with diverse and unconventional topics throughout, it seeks to inspire students, as well as experts, to go beyond the novel materials highlighted and develop new materials with enhanced separations properties.

Edited by leading authorities in the field, *Materials for Carbon Capture* offers in-depth chapters covering: CO<sub>2</sub> Capture and Separation of Metal-Organic Frameworks; Porous Carbon Materials: Designed Synthesis and CO<sub>2</sub> Capture; Porous Aromatic Frameworks for Carbon Dioxide Capture; and Virtual Screening of Materials for Carbon Capture. Other chapters look at Ultrathin Membranes for Gas Separation; Polymeric Membranes; Carbon Membranes for CO<sub>2</sub> Separation; and Composite Materials for Carbon Captures. The book finishes with sections on Poly(amidoamine) Dendrimers for Carbon Capture and Ionic Liquids for Chemisorption of CO<sub>2</sub> and Ionic Liquid-Based Membranes.

- A comprehensive overview and survey of the present status of materials and technologies for carbon capture
- Covers materials synthesis, gas separations, membrane fabrication, and CO<sub>2</sub> removal to highlight recent progress in the materials and chemistry aspects of carbon capture
- Allows the reader to better understand the challenges and opportunities in carbon capture
- Edited by leading experts working on materials and membranes for carbon separation and capture

*Materials for Carbon Capture* is an excellent book for advanced students of chemistry, materials science, chemical and energy engineering, and early career scientists who are interested in carbon capture. It will also be of great benefit to researchers in academia, national labs, research institutes, and industry working in the field of gas separations and carbon capture.



## Power System Dynamics with Computer-Based Modeling and Analysis

Yoshihide Hase, Tanuj Khandelwal & Kazuyuki Kameda

ISBN: 978-1-119-48745-6 • Mar 2020 • 1128pp

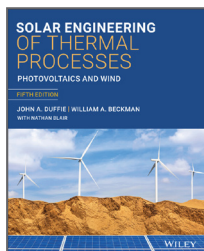
### A unique combination of theoretical knowledge and practical analysis experience

Derived from Yoshihide Hase's *Handbook of Power Systems Engineering, 2<sup>nd</sup> Edition*, this book provides readers with everything they need to know about power system dynamics. Presented in three parts, it covers power system theories, computation theories, and how prevailed engineering platforms can be utilized for various engineering works. It features many illustrations based on ETAP to help explain the knowledge within as much as possible.

Recompiling all the chapters from the previous book, *Power System Dynamics with Computer Based Modeling and Analysis* offers nineteen new and improved content with updated information and all new topics, including two new chapters on circuit analysis which help engineers with non-electrical engineering backgrounds. Topics covered include: Essentials of Electromagnetism; Complex Number Notation (Symbolic Method) and Laplace-transform; Fault Analysis Based on Symmetrical Components; Synchronous Generators; Induction-motor; Transformer; Breaker; Arrester; Overhead-line; Power cable; Steady-State/Transient/Dynamic Stability; Control governor; AVR; Directional Distance Relay and R-X Diagram; Lightning and Switching Surge Phenomena; Insulation Coordination; Harmonics; Power Electronics Applications (Devices, PE-circuit and Control) and more.

- Combines computer modeling of power systems, including analysis techniques, from an engineering consultant's perspective
- Uses practical analytical software to help teach how to obtain the relevant data, formulate 'what-if?' cases, and convert data analysis into meaningful information
- Includes mathematical details of power system analysis and power system dynamics

*Power System Dynamics with Computer-Based Modeling and Analysis* will appeal to all power system engineers as well as engineering and electrical engineering students.



## Solar Engineering of Thermal Processes, 5th Edition

Photovoltaics and Wind

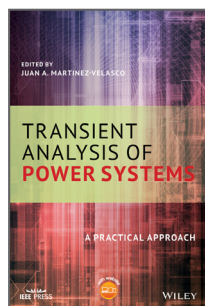
John A. Duffie & William A. Beckman

ISBN: 978-1-119-54028-1 • Apr 2020 • 944pp • Previous Edition: 978-0-470-87366-3

### Recognized as the leading solar engineering text and reference

The early chapters cover the basics of solar energy and how we get energy from the sun, then readers are introduced to technologies that harvest, store, and deliver solar energy, such as photovoltaics, solar heaters, and cells. Applications of these technologies and how they are used in various market sectors are explored in the later chapters. This fifth edition offers in-depth guidance on the use of two key engineering software, Engineering Equation Solver (EES) and System Advisor Model (SAM), that allow for students and researchers to solve complex equations quickly and perform long-term or annual simulations. Part II will be updated to include all-new examples, performance data, and photos of solar energy applications today, and the concentrating solar power (CSP) chapter will be updated and expanded. The practice problems in the Appendix will be updated, and Instructors will have access to an updated Solutions Manual via a book companion website.





## Transient Analysis of Power Systems A Practical Approach

Dr. Juan A. Martinez-Velasco

Series: Wiley – IEEE • ISBN: 978-1-119-48053-2 • Mar 2020 • 624pp

### A hands-on introduction to advanced applications of power system transients with practical examples

*Transient Analysis of Power Systems: A Practical Approach* offers an authoritative guide to the traditional capabilities and the new software and hardware approaches that can be used to carry out transient studies and make possible new and more complex research. The book explores a wide range of topics from an introduction to the subject to a review of the many advanced applications, involving the creation of custom-made models and tools and the application of multicore environments for advanced studies.

The authors cover the general aspects of the transient analysis such as modelling guidelines, solution techniques and capabilities of a transient tool. The book also explores the usual application of a transient tool including over-voltages, power quality studies and simulation of power electronics devices. In addition, it contains an introduction to the transient analysis using the ATP. All the studies are supported by practical examples and simulation results. This important book:

- Summarises modelling guidelines and solution techniques used in transient analysis of power systems
- Provides a collection of practical examples with a detailed introduction and a discussion of results
- Includes a collection of case studies that illustrate how a simulation tool can be used for building environments that can be applied to both analysis and design of power systems
- Offers guidelines for building custom-made models and libraries of modules, supported by some practical examples
- Facilitates application of a transients tool to fields hardly covered with other time-domain simulation tools
- Includes a companion website with data (input) files of examples presented, case studies and power point presentations used to support cases studies

Written for EMTP users, electrical engineers, *Transient Analysis of Power Systems* is a hands-on and practical guide to advanced applications of power system transients that includes a range of practical examples.

## MATERIAL SCIENCE – CERAMICS

### Encyclopedia of Glass Science, Technology, History, and Culture

## Encyclopedia of Glass Science, Technology, History, and Culture

Pascal Richet

ISBN: 978-1-118-79942-0 • Mar 2020 • 1000pp

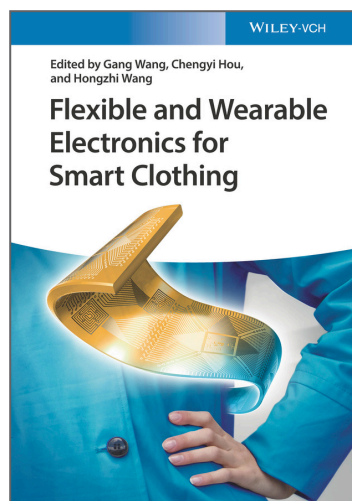
### A comprehensive and up-to-date encyclopedia to the fabrication, nature, properties, uses, and history of glass

The *Encyclopedia of Glass Science, Technology, History, and Culture* has been designed to satisfy the needs and curiosity of a broad audience interested in the most varied aspects of material that is as old as the universe. As described in over 100 chapters and illustrated with 1100 figures, the practical importance of glass has increased over the ages since it was first man-made four millennia ago. The old-age glass vessels and window and stained glass now coexist with new high-tech products that include for example optical fibers, thin films, metallic, bioactive and hybrid organic-inorganic glasses, amorphous ices or all-solid-state batteries.

In the form of scholarly introductions, the Encyclopedia chapters have been written by 151 noted experts working in 23 countries. They present at a consistent level and in a self-consistent manner these industrial, technological, scientific, historical and cultural aspects. Addressing the most recent fundamental advances in glass science and technology, as well as rapidly developing topics such as extra-terrestrial or biogenic glasses, this important guide:

- Begins with industrial glassmaking
- Turns to glass structure and to physical, transport and chemical properties
- Deals with interactions with light, inorganic glass families and organically related glasses
- Considers a variety of environmental and energy issues
- And concludes with a long section on the history of glass as a material from Prehistory to modern glass science

The *Encyclopedia of Glass Science, Technology, History, and Culture* has been written not only for glass scientists and engineers in academia and industry, but also for material scientists as well as for art and industry historians. It represents a must-have, comprehensive guide to the myriad aspects this truly outstanding state of matter.



ISBN: 978-3-527-34534-2

Apr 2020 • 376pp

## Wearable and Flexible Electronics Aimed to Smart Clothing

Gang Wang, Chengyi Hou & Hongzhi Wang



### Provides the state-of-the-art on wearable technology for smart clothing

The book gives a coherent overview of recent development on flexible electronics for smart clothing with emphasis on wearability and durability of the materials and devices. It offers detailed information on the basic functional components of the flexible and wearable electronics including sensing, systems-on-a-chip, interacting, and energy, as well as the integrating and connecting of electronics into textile form. It also provides insights into the compatibility and integration of functional materials, electronics, and the clothing technology.

Flexible and Wearable Electronics for Smart Clothing offers comprehensive coverage of the technology in four parts. The first part discusses wearable organic nano-sensors, stimuli-responsive electronic skins, and flexible thermoelectrics and thermoelectric textiles. The next part examines textile triboelectric nanogenerators for energy harvesting, flexible and wearable solar cells and supercapacitors, and flexible and wearable lithium-ion batteries. Thermal and humid management for next-generation textiles, functionalization of fiber materials for washable smart wearable textiles, and flexible microfluidics for wearable electronics are covered in the next section. The last part introduces readers to piezoelectric materials and devices based flexible bio-integrated electronics, printed electronics for smart clothes, and the materials and processes for stretchable and wearable e-textile devices.

- Presents the most recent developments in wearable technology such as wearable nanosensors, logic circuit, artificial intelligence, energy harvesting, and wireless communication
- Covers the flexible and wearable electronics as essential functional components for smart clothing from sensing, systems-on-a-chip, interacting, energy to the integrating and connecting of electronics
- Of high interest to a large and interdisciplinary target group, including materials scientists, textile chemists, and electronic engineers in academia and industry

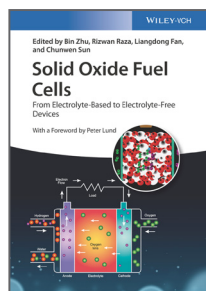
Flexible and Wearable Electronics for Smart Clothing will appeal to materials scientists, textile industry professionals, textile engineers, electronics engineers, and sensor developers.

### About the Authors

**Gang Wang** is currently Postdoc Fellow at the Northwestern University in Evanston, USA. And he has been working with Professor Tobin J Marks and Antonio Facchetti since 2016. He received a joint PhD from Donghua University and Georgia Institute of Technology, USA. His research includes soft electronics for artificial intelligence, shear printing strategy development and synchrotron radiation characterization for soft materials.

**Chengyi Hou** is Assistant Professor in the College of Materials Science and Engineering at Donghua University, China. After his PhD from Donghua University, he worked as a H.C. Ørsted-Marie Curie Postdoc in the Department of Chemistry at Technical University of Denmark, Denmark. His research interest focuses on nanomaterial-based soft electronics including electronic skin, micro-reactors, artificial muscle and three-dimensional biological scaffolds.

**Hongzhi Wang** is Professor in the College of Materials Science and Engineering at Donghua University, China. After his PhD from Shanghai Institute of Ceramics, Chinese Academy of Sciences, China, he worked for five years as a postdoctoral fellow at Micro-space Chemistry Lab in National Institute of Advanced Industrial Science and Technology, Japan. He joined Donghua University in 2005 and his research focuses on materials and devices for wearable applications. He has published more than 200 peer-reviewed articles and holds more than 80 patents. Two of the patents have been commercialized in functional fiber industry in China.



## Solid Oxide Fuel Cells

### From Electrolyte-Based to Electrolyte-Free Devices

Bin Zhu, Rizwan Raza, Liangdong Fan & Chunwen Sun

ISBN: 978-3-527-34411-6 • Jun 2020 • 512pp

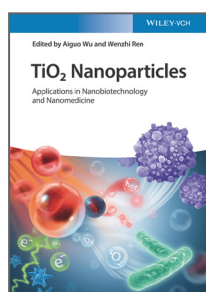
**Presents innovative approaches towards affordable, highly efficient, and reliable sustainable energy systems**

Written by leading experts on the subject, this book provides not only a basic introduction and understanding of conventional fuel cell principle, but also an updated view of the most recent developments in this field. It focuses on the new energy conversion technologies based on both electrolyte and electrolyte-free fuel cells?from advanced novel ceria-based composite electrolyte low temperature solid oxide fuel cells to non-electrolyte fuel cells as advanced fuel-to-electricity conversion technology.

Solid Oxide Fuel Cells: From Electrolyte-Based to Electrolyte-Free Devices is divided into three parts. Part I covers the latest developments of anode, electrolyte, and cathode materials as well as the SOFC technologies. Part II discusses the non-electrolyte or semiconductor-based membrane fuel cells. Part III focuses on engineering efforts on materials, technology, devices and stack developments, and looks at various applications and new opportunities of SOFC using both the electrolyte and non-electrolyte principles, including integrated fuel cell systems with electrolysis, solar energy, and more.

- Offers knowledge on how to realize highly efficient fuel cells with novel device structures
- Shows the opportunity to transform the future fuel cell markets and the possibility to commercialize fuel cells in an extended range of applications
- Presents a unique collection of contributions on the development of solid oxide fuel cells from electrolyte based to non-electrolyte-based technology
- Provides a more comprehensive understanding of the advances in fuel cells and bridges the knowledge from traditional SOFC to the new concept
- Allows readers to track the development from the conventional SOFC to the non-electrolyte or single-component fuel cell

Solid Oxide Fuel Cells: From Electrolyte-Based to Electrolyte-Free Devices will serve as an important reference work to students, scientists, engineers, researchers, and technology developers in the fuel cell field.



## TiO<sub>2</sub> Nanoparticles

### Applications in Nanobiotechnology, Theranostics and Nanomedicine

Aiguo Wu & Wenzhi Ren

ISBN: 978-3-527-34724-7 • May 2020 • 256pp

**A unique book that summarizes the properties, toxicology, and biomedical applications of TiO<sub>2</sub>-based nanoparticles**

Nanotechnology is becoming increasingly important for products used in our daily lives. Nanometer-sized titanium dioxide (TiO<sub>2</sub>) are widely used in industry for different purposes, such as painting, sunscreen, printing, cosmetics, biomedicine, and so on. This book summarizes the advances of TiO<sub>2</sub> based nanobiotechnology and nanomedicine, covering materials properties, toxicological research, and biomedical application, such as antibacter, biosensing, and cancer theranostics. It uniquely integrates the TiO<sub>2</sub> applications from physical properties, toxicology to various biomedical applications, and includes black TiO<sub>2</sub> based cancer theranostics.

Beginning with a comprehensive introduction to the properties and applications of nanoparticles, TiO<sub>2</sub> Nanoparticles: Applications in Nanobiotechnology, Theranostics and Nanomedicine offers chapters on: Toxicity of TiO<sub>2</sub> Nanoparticles; Antibacterial Applications of TiO<sub>2</sub> Nanoparticles; Surface Enhanced Raman Spectrum of TiO<sub>2</sub> Nanoparticle for Biosensing (TiO<sub>2</sub> Nanoparticle Served as SERS Sensing Substrate); TiO<sub>2</sub> as Inorganic Photosensitizer for Photodynamic Therapy; Cancer Theranostics of Black TiO<sub>2</sub> Nanoparticles; and Neurodegenerative Disease Diagnostics and Therapy of TiO<sub>2</sub>-Based Nanoparticles. This title:

- Blends the physical properties, toxicology of TiO<sub>2</sub> nanoparticles to the many biomedical applications
- Includes black TiO<sub>2</sub> based cancer theranostics in its coverage
- Appeals to a broad audience of researchers in academia and industry working on nanomaterials-based biosensing, drug delivery, nanomedicine

TiO<sub>2</sub> Nanoparticles: Applications in Nanobiotechnology, Theranostics and Nanomedicine is an ideal book for medicinal chemists, analytical chemists, biochemists, materials scientists, toxicologists, and those in the pharmaceutical industry.



### Handbook of Fibrous Materials, 2 Volumes

## Handbook of Fibrous Materials, 2 Volumes

Vol. 1: Production and Characterization /

Vol. 2: Applications in Energy, Environmental Science and Healthcare

Jinlian Hu

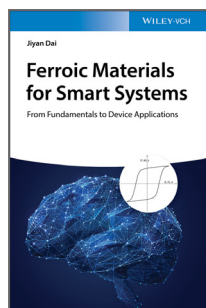
Edited by a leading expert in the field with contributions from experienced researchers in fibers and textiles, this handbook reviews the current state of fibrous materials and provides a broad overview of their use in research and development. Volume One focuses on the classes of fibers, their production and characterization, while the second volume concentrates on their applications, including emerging ones in the areas of energy, environmental science and healthcare. Unparalleled knowledge of high relevance to academia and industry.

ISBN: 978-3-527-34220-4

Jun 2020 • 1040pp

### About the Author

**Jinlian Hu** is Professor in The Institute of Textiles and Clothing at The Hong Kong Polytechnic University, Hong Kong. She obtained her PhD from The University of Manchester Institute of Science and Technology (now University of Manchester), UK. She has published more than 300 publications and has received numerous scientific awards, including the 2001 Award for Distinguished Achievement from the US Fiber Society. She is a Fellow of the Textile Institute and of the Hong Kong Institution of Textile and Apparel and Editor-in-Chief for Research Journal of Textiles and Apparel. Dr. Bipin Kumar is currently an assistant Professor in The Department of Textile Technology at IIT Delhi, India. He graduated from The Indian Institute of Technology Delhi, India, with a PhD in Textile Engineering in 2013. He has been awarded an ACP outstanding material scientist from the American College of Phlebology in the field of Phlebology. His main research focuses on smart fibrous/polymeric materials and related fabric structures. Currently, he is engaged in research and development of functional textiles for several engineering and medical applications.



## Ferroic Materials for Smart Systems From Fundamentals to Device Applications

Huimin Zhao

ISBN: 978-3-527-34476-5 • Apr 2020 • 262pp

**Presents state-of-the-art knowledge?from basic insights to applications?on ferroic materials-based devices**

This book covers the fundamental physics, fabrication methods, and applications of ferroic materials and covers bulk, thin films, and nanomaterials. It provides a thorough overview of smart materials and systems involving the interplays among the mechanical strain, electrical polarization, magnetization, as well as heat and light. Materials presented include ferroelectric, multiferroic, piezoelectric, electrostrictive, magnetostrictive, and shape memory materials as well as their composites. The book also introduces various sensor and transducer applications, such as ultrasonic transducers, surface acoustic wave devices, microwave devices, magneto-electric devices, infrared detectors and memories.

*Ferroic Materials for Smart Systems: Fabrication, Devices and Applications* introduces advanced measurement and testing techniques in ferroelectrics, including FeRAM and ferroelectric tunnelling based resistive switching. It also looks at ferroelectricity in emerging materials, such as 2D materials and high-k gate dielectric material HfO<sub>2</sub>. Engineering considerations for device design and fabrication are examined, as well as applications for magnetostrictive devices. Multiferroics of materials possessing both ferromagnetic and ferroelectric orders is covered, along with ferroelastic materials represented by shape memory alloy and magnetic shape memory alloys.

- Brings together physics, fabrication, and applications of ferroic materials in a coherent manner
- Discusses recent advances in ferroic materials technology and applications -Covers dielectric, ferroelectric, pyroelectric and piezoelectric materials
- Introduces electrostrictive materials and magnetostrictive materials -Examines shape memory alloys and magneto-shape-memory alloys
- Introduces devices based on the integration of ferroelectric and ferromagnetic materials such as multiferroic memory device and ME coupling device for sensor applications

*Ferroic Materials for Smart Systems: Fabrication, Devices and Applications* will appeal to a wide variety of researchers and developers in physics, materials science and engineering.

## MECHANICAL ENGINEERING



## Control of Mechatronic Systems Model-Driven Design and Implementation Guidelines

Patrick O. J. Kaltjob

ISBN: 978-1-119-50580-8 • Mar 2020 • 504pp

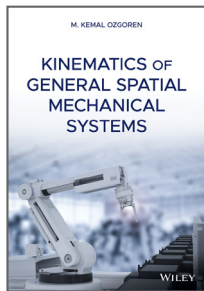
**A practical methodology for designing integrated automation control for systems and processes**

Implementing digital control within mechanical-electronic (mechatronic) systems is essential to respond to the growing demand for high-efficiency machines and processes. In practice, the most efficient digital control often integrates time-driven and event-driven characteristics within a single control scheme. However, most of the current engineering literature on the design of digital control systems presents discrete-time systems and discrete-event systems separately. *Control Of Mechatronic Systems: Model-Driven Design And Implementation Guidelines* unites the two systems, revisiting the concept of automated control by presenting a unique practical methodology for whole-system integration. With its innovative hybrid approach to the modeling, analysis, and design of control systems, this text provides material for mechatronic engineering and process automation courses, as well as for self-study across engineering disciplines. Real-life design problems and automation case studies help readers transfer theory to practice, whether they are building single machines or large-scale industrial systems.

- Presents a novel approach to the integration of discrete-time and discrete-event systems within mechatronic systems and industrial processes
- Offers user-friendly self-study units, with worked examples and numerous real-world exercises in each chapter
- Covers a range of engineering disciplines and applies to small- and large-scale systems, for broad appeal in research and practice
- Provides a firm theoretical foundation allowing readers to comprehend the underlying technologies of mechatronic systems and processes

*Control Of Mechatronic Systems* is an important text for advanced students and professionals of all levels engaged in a broad range of engineering disciplines.





## Kinematics of General Spatial Mechanical Systems

M. Kemal Ozgoren

ISBN: 978-1-119-19573-3 • Mar 2020 • 650pp

### Guide to kinematic theory for the analysis of spatial mechanisms and manipulators

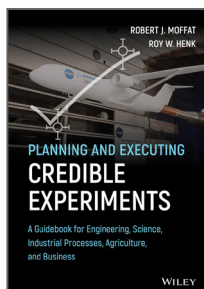
*Kinematics of General Spatial Mechanical Systems* is an effective and proficient guide to the kinematic description and analysis of the spatial mechanical systems such as serial manipulators, parallel manipulators and spatial mechanisms. The author highlights the analytical and semi-analytical methods for solving the relevant equations and considers four main elements: The mathematics of spatial kinematics with the necessary theorems, formulas and methods; The kinematic description of the links and joints including the rolling contact joints; Writing the kinematic chain and loop equations for the systems to be analyzed; and Solving these equations for the unspecified variables both in the forward and inverse senses together with the multiplicity and singularity analyses.

Comprehensive in scope, the book covers topics ranging from rather elementary subjects such as spatial mechanisms with single degree of freedom to more advanced topics such as serial manipulators including redundant and deficient ones, parallel manipulators, and non-holonomic spatial cam mechanisms that involve rolling without slipping motions. The author presents an effective and accessible symbolic manipulation method making it possible to obtain neat and transparent expressions that describe the systems showing all the kinematic details. Such expressions readily lead to analytical or semi-analytical solutions. They also facilitate the identification and analysis of the multiplicities and singularities.

This all-time beneficial book:

- Provides an easy-to-use systematic formulation method that is applicable to all sorts of spatial mechanisms and manipulators
- Introduces a symbolic manipulation method, which is effective and straightforward to use, so that kinematic relationships can be simplified by using all the special geometric features of the system
- Offers an accessible format that uses a systematic and easy-to-conceive notation which has proven successful
- Presents content written by an author who is a renowned expert in the field
- Includes an accompanying website

Written for academicians, students, engineers, computer scientists and any other people working in the area of spatial mechanisms and manipulators, *Kinematics of General Spatial Mechanical Systems* provides a clear notation, formulation, and a logical approach to the topic and offers a fresh presentation of challenging material.



## Planning and Executing Credible Experiments

Robert J. Moffat & Roy W. Henk

ISBN: 978-1-119-53287-3 • May 2020 • 282pp

### Provides comprehensive coverage of experiment planning, execution, and analysis

This handy, single-source resource guides readers in planning and conducting credible experiments for engineering, science, industrial processes, agriculture, and business. It takes them all the way through designing successful experiments, from initial conception, through execution of the experiment, to the final report, and prepares the reader to anticipate the choices faced throughout each one.

Filled with real-world examples from engineering science and industry, *Planning and Executing Credible Experiments: A Guidebook for Engineering, Science, Industrial Processes, Agriculture, and Business* offers chapters that challenge experimenters at each stage of planning and execution. Tested over decades at Stanford University and internationally, it is accompanied by a website hosting two powerful, free, open-source software tools that reinforce experiment design and analysis.

- A comprehensive guide to experiment planning, execution, and analysis
- Leads from initial conception, through the experiment's launch, to final report
- Prepares the reader to anticipate the choices faced throughout an experiment
- Offers chapters that propose questions that an experimenter will need to ask and answer during each stage of planning and execution
- Includes examples from real-life industrial experiments
- Accompanied by a website hosting open-source software

*Planning and Executing Credible Experiments* is an excellent resource for graduates and senior undergraduates—as well as professionals—across a wide variety of engineering disciplines.

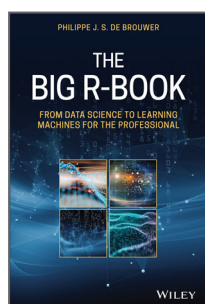
### Modelling and Simulation of Mechanical and Mechatronic Systems

## Modelling and Simulation of Mechanical and Mechatronic Systems

Pushparaj Mani Pathak & Arun Kumar Samantaray

ISBN: 978-1-119-22221-7 • Mar 2020 • 600pp

Modelling and Simulation of Mechanical and Mechatronic Systems is an introductory textbook covering modelling of mechanical and mechatronic systems with simulation results. Simple systems and their mathematical models are explained in detail and an approach to deal with complex systems is also discussed. MATLAB and Simulink examples are included to show the behaviour of dynamic systems and a companion website hosting simulation files is available. Modelling and Simulation of Mechanical and Mechatronic Systems takes a systematic approach beginning with the fundamental concepts of modelling and simulation before moving on to cover the application of these concepts to mechanical and mechatronic systems. The easy to follow approach makes Modelling and Simulation of Mechanical and Mechatronic Systems an ideal textbook for undergraduate and graduate courses on mechanical and mechatronics systems.



## The Big R-Book

From Data Science to Learning Machines for the Professional

Philippe J. S. De Brouwer

ISBN: 978-1-119-63272-6 • Apr 2020 • 864pp

**Introduces professionals and scientists to statistics and machine learning using the programming language R**

Written by and for practitioners, this book provides an overall introduction to R, focusing on tools and methods commonly used in data science, and placing emphasis on practice and business use. It covers a wide range of topics in a single volume, including big data, databases, statistical machine learning, data wrangling, data visualization, and the reporting of results. The topics covered are all important for someone with a science/math background that is looking to quickly learn several practical technologies to enter or transition to the growing field of data science.

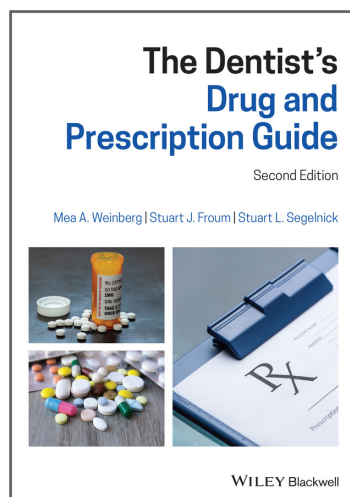
*The Big R-Book for Professionals: From Data Science to Learning Machines and Reporting with R* includes nine parts, starting with an introduction to the subject and followed by an overview of R and elements of statistics. The third part revolves around data, while the fourth focuses on data wrangling. Part 5 teaches readers about exploring data. In Part 6 we learn to build models, Part 7 introduces the reader to the reality in companies, Part 8 covers reports and interactive applications and finally Part 9 introduces the reader to big data and performance computing. It also includes some helpful appendices.

- Provides a practical guide for non-experts with a focus on business users
- Contains a unique combination of topics including an introduction to R, machine learning, mathematical models, data wrangling, and reporting
- Uses a practical tone and integrates multiple topics in a coherent framework
- Demystifies the hype around machine learning and AI by enabling readers to understand the provided models and program them in R
- Shows readers how to visualize results in static and interactive reports
- Supplementary materials includes PDF slides based on the book's content, as well as all the extracted R-code and is available to everyone on a Wiley Book Companion Site

*The Big R-Book* is an excellent guide for science technology, engineering, or mathematics students who wish to make a successful transition from the academic world to the professional. It will also appeal to all young data scientists, quantitative analysts, and analytics professionals, as well as those who make mathematical models.

# Health Sciences





ISBN: 978-1-119-53934-6

**Previous Edition:**  
978-0-470-96044-8

Apr 2020 • 312pp

# The Dentist's Drug and Prescription Guide, 2nd Edition

Mea A. Weinberg, Stuart J. Froum & Stuart L. Segelnick

Previous Editions Licensed in 1E sold in Turkish, Bahasa Indonesian, Spanish



## The updated and authoritative reference to medications used in dental practice

The revised and updated second edition of *The Dentist's Drug and Prescription Guide* offers a practical and quick reference to medications commonly prescribed in dental practice. With contributions from experts on the topic, this comprehensive book takes an accessible question-and-answer format, providing answers to common questions dentists ask about drugs. The most updated information on drugs is presented throughout, including the current antibiotic prophylaxis guidelines and newer osteoporosis drugs.

A new section describes how to manage patients on medications, and includes new chapters on the important topics of opioid prescribing and abuse and pain management. Alternative effective medications for opioids are discussed in detail. Putting all the prescription and drug information needed in daily dental practice at your fingertips, *The Dentist's Drug and Prescription Guide* is an essential reference for practicing dental clinicians and dental hygienists. This important book:

- Offers a comprehensive and accessible guide to essential information about medications used in dental practice
- Presents detailed information about drugs in an easy-to-use question-and-answer format
- Provides answers to commonly asked questions about drugs
- Refers to current, evidence-based pharmacology information, tailored for the dental clinician
- Features information on opioid prescribing and abuse and pain management

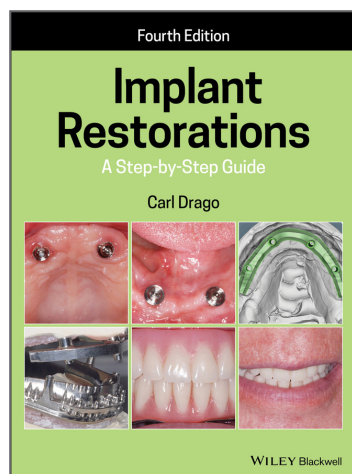
Written for both general and specialist dentists and dental hygienists, the revised second edition of *The Dentist's Drug and Prescription Guide* is a must-have reference for the most current information available on medications used in the dental profession.

## About the Authors

**Mea A. Weinberg**, DMD, MSD, RPh, is a Clinical Professor of Periodontology and Implant Dentistry at New York University College of Dentistry in New York, New York, USA.

**Stuart J. Froum**, DDS, is an adjunct Clinical Professor of Periodontics and Implant Dentistry and Director of Clinical Research, in the Department of Periodontics and Implant Dentistry at New York University Dental Center in New York, New York, USA.

**Stuart L. Segelnick**, DDS, MS, is an adjunct Clinical Professor of Periodontology and Implant Dentistry at New York University College of Dentistry in New York, New York, USA.



**ISBN:** 978-1-119-53811-0

**Previous Edition:**  
978-1-118-51305-7

Mar 2020 • 536pp

## Implant Restorations, 4th Edition A Step-by-Step Guide

Carl Drago

Previous Editions Licensed in 3E sold in Spanish, Simplified Chinese; 2E sold in Simplified Chinese, Turkish, Spanish, Portuguese

The fourth edition of *Implant Restorations: A Step-by-Step Guide* provides a wealth of updated and expanded coverage on detailed procedures for restoring dental implants. Focusing on the most common treatment scenarios, it offers concise literature reviews for each chapter and easy-to-follow descriptions of the techniques, along with high-quality clinical photographs demonstrating each step.

Comprehensive throughout, this practical guide begins with introductory information on incorporating implant restorative dentistry in clinical practice. It covers diagnosis and treatment planning and digital dentistry, and addresses advances in cone beam computerized tomography (CBCT), treatment planning software, computer generated surgical guides, rapid prototype printing and impression-less implant restorative treatments, intra-oral scanning, laser sintering, and printing/milling polymer materials. Record-keeping, patient compliance, hygiene regimes, and follow-up are also covered.

- Provides an accessible step-by-step guide to commonly encountered treatment scenarios, describing procedures and techniques in an easy-to-follow, highly illustrated format
- Offers new chapters on diagnosis and treatment planning and digital dentistry
- Covers advances in cone beam computerized tomography (CBCT), computer generated surgical guides, intra-oral scanning, laser sintering, and more

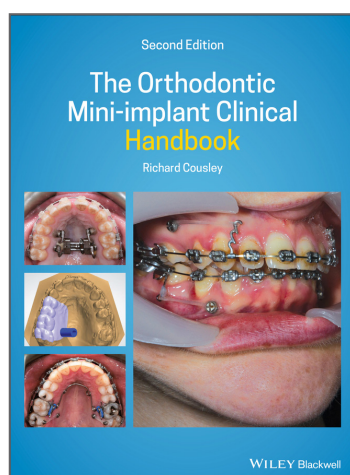
An excellent and accessible guide on a burgeoning subject in modern dental practice by one of its most experienced clinicians, *Implant Restorations: A Step-by-Step Guide, Fourth Edition* will appeal to prosthodontists, general dentists, implant surgeons, dental students, dental assistants, hygienists, and dental laboratory technicians.

### About the Author

**Carl Drago**, DDS, MS, Diplomate of the American Board of Prosthodontics (ABP), is in private practice near Milwaukee, Wisconsin, USA; is a section editor for the Journal of Prosthodontics; and is an adjunct associate professor at the Marquette University School of Dentistry in Milwaukee, Wisconsin, USA.







ISBN: 978-1-119-50975-2

**Previous Edition:**  
978-1-118-27599-3

Apr 2020 • 344pp

# The Orthodontic Mini-implant Clinical Handbook, 2nd Edition

Richard Cousley

Previous Editions Licensed in 1E sold in Bahasa Indonesia, Spanish, Russia, Italy

**Offers the very latest on the theory and practice of integrating mini-implant techniques into clinical practice**

This all-new second edition of *The Orthodontic Mini-implant Clinical Handbook* provides a thoroughly revised and expanded update to the theoretical and practical aspects of using mini-implants in orthodontic practice. Taking a practical step-by-step approach with hundreds of clinical images, it presents updated clinical techniques and new clinical cases, covering all topics of importance for utilising mini-implants. It also includes a new chapter on mini-implant anchored maxillary expansion appliances.

It begins with a chapter that looks at mini-implant principles and potential complications, before moving onto clinical and design factors for maximising mini-implant success. Other chapters cover incisor retraction; molar distalisation and protraction; intrusion and anterior openbite treatments; bone anchored rapid maxillary expansion; orthognathic surgical uses; and ectopic teeth.

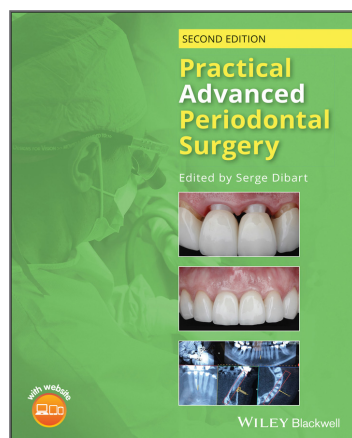
- Provides a comprehensive guide to both theoretical and practical advice for the use of mini-implants in orthodontic practice
- Covers updated clinical techniques and new clinical cases
- Presents a new chapter on mini-implant anchored maxillary expansion appliances
- Takes a highly illustrated step-by-step approach ideal for clinical practice

*The Orthodontic Mini-Implant Clinical Handbook* is an essential resource to orthodontists, maxillofacial surgeons, practicing dentists, and anyone with an interest in mini-implant skeletal anchorage.

## About the Author

**Richard Cousley** is a Consultant Orthodontist based at the Priestgate Clinic in Peterborough and also works in collaboration with the North West Anglia NHS Foundation Trust, UK.





**ISBN:** 978-1-119-19631-0

**Previous Edition:**  
978-0-8138-0957-1

Apr 2020 • TBAApp

# Practical Advanced Periodontal Surgery, 2nd Edition

Serge Dibart

Previous Editions Licensed in 1E sold in Turkish, Spanish



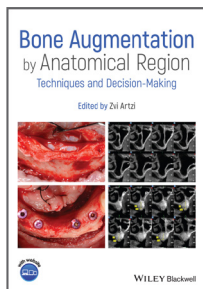
**A fully updated second edition of this well-illustrated guide to advanced surgical procedures in periodontology**

*Practical Advanced Periodontal Surgery, Second Edition* is a step-by-step guide to cutting-edge surgical techniques and interdisciplinary treatment approaches in periodontology. Written by leading experts in the field, the book provides solutions to complex daily dental challenges with innovative approaches to each treatment modality. Procedures are described in a practical and accessible style, highlighting complex and advanced procedures using a highly illustrated visual format.

This expanded edition includes three new chapters that cover IV sedation, digital technologies in clinical restorative dentistry, and advanced implant therapies in the esthetic zone post extraction. Well balanced and solidly grounded in the science, this reference work is an indispensable resource for the practitioner of advanced dentistry. This important guide:

- Offers an easy-to-use, practical step-by-step format
- Contains clinical photographs that detail the surgical procedures presented
- Reviews the most advanced techniques in periodontal surgery and their integration with digital treatment planning and workflow
- Discusses the pros and cons for each procedure, as well as limitations and potential complications
- Features video clips illustrating key points in the procedures described on a companion website

Written for periodontists, periodontal residents and general or restorative dentists, this revised edition of *Practical Advanced Periodontal Surgery* is a practical and complete clinical manual filled with illustrations for easy reference.



## Bone Augmentation by Anatomical Region

### Techniques and Decision-Making

Zvi Artzi

ISBN: 978-1-119-42784-1 • Jul 2020 • 415pp

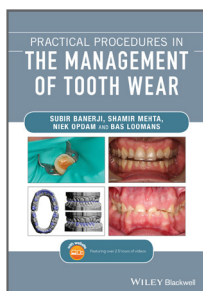
**Comprehensively describes bone augmentation techniques and their application to the different anatomical regions of the upper and lower jaws.**

*Bone Augmentation by Anatomical Region* is a unique, evidence-based guide focusing on each specific anatomical region – anterior maxilla, posterior maxilla, anterior mandible, and posterior mandible – in order to emphasize the correct implemented procedures needed to successfully perform oral osseous reconstruction.

Numerous ridge augmentation techniques are covered, including: horizontal and vertical guided bone regeneration, autologous block transplantation, interpositional bone grafting, allogeneic blocks, sandwich technique, split-expansion ridge technique, and sinus floor grafting. Non-augmented approaches such as forced socket site extrusion and the installation of digitally printed implants are also presented and discussed.

- Guides readers on tackling bone augmentation via anatomical region of the jaws and their related surrounding muscles, vascularization and innervation
- Presents innovative augmentation techniques for the anterior maxilla, posterior maxilla, anterior mandible, and posterior mandible
- Includes clinical photographs in each section and a decision tree to help readers select the appropriate surgical modality

*Bone Augmentation by Anatomical Region* is a specialist resource suitable for dentists who practice implant dentistry, oral surgeons, oral and maxillofacial surgeons, periodontists, and postgraduate dental students in the above-mentioned disciplines.



## Practical Procedures in the Management of Tooth Wear

Subir Banerji, Shamir B. Mehta, Niek Opdam & Bas Loomans

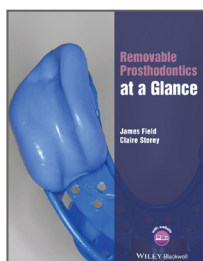
ISBN: 978-1-119-38986-6 • Mar 2020 • 248pp

New to the *Practical Procedures in...* series, *Practical Procedures in the Management of Tooth Wear* demonstrates a wide range of up to date clinical techniques in the practical management of tooth wear.

Presented in an accessible and user-friendly format, the book summarises the key points of each procedure, complete with clinical photographs. Chapters outline the principles and procedures for each technique, offer clinical tips and advice, and include full references. Topics include patient assessment and diagnosis, treatment planning for localised and generalised tooth wear, the partially dentate patient, tooth wear monitoring, management, and maintenance. Created by an internationally-recognised team with both clinical and academic expertise, this valuable resource:

- Presents comprehensive, evidence-based coverage of the management of tooth wear
- Examines the epidemiology and etiology of tooth wear
- Covers practical aspects such as record taking, aesthetic evaluation, prevention, clinical occlusion and active monitoring
- Includes access to high quality instructional videos to further supplement the text.

*Practical Procedures in the Management of Tooth Wear* is a unique source of information for general dental practitioners, senior undergraduate dental students, and postgraduates preparing for higher qualifications and training.



## Removable Prosthodontics at a Glance

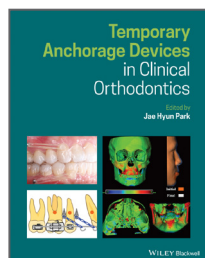
James Field & Claire Storey

Series: At a Glance (Dentistry) • ISBN: 978-1-119-51074-1 • Jun 2020 • 120pp

*Removable Prosthodontics at a Glance* provides a comprehensive and accessible guide to the practical elements of complete and partial denture provision. It serves as the perfect illustrated guide for learners, and a handy revision guide for subsequent undergraduate and postgraduate studies.

Following the familiar, easy to use *at a Glance* format, each topic is presented as a double page spread with text accompanied by clear colour diagrams and clinical photographs to support conceptual understanding. Key concepts such as patient assessment, material handling, denture design, making impressions, and much more are explained and superbly illustrated enabling the reader to visualise the intended clinical endpoint.

*Removable Prosthodontics at a Glance* is a valuable resource for students studying dentistry and clinical dental technology, and those preparing for further studies in Prosthodontics.



## Temporary Anchorage Devices in Clinical Orthodontics

Jae Hyun Park

ISBN: 978-1-119-51347-6 • Mar 2020 • TBApp

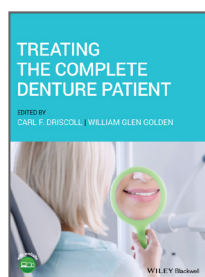
**Provides the latest information on all aspects of using temporary anchorage devices in clinical orthodontics, from diagnosis and treatment planning to appliances and applications**

Written by some of the world's leading experts in orthodontics, *Temporary Anchorage Devices in Clinical Orthodontics* is a comprehensive, up-to-date reference that covers all aspects of temporary anchorage device (TAD) use in contemporary orthodontics. Taking a real-world approach to the subject, it covers topics ranging from diagnosis and treatment planning to the many applications and management of complications. Case studies demonstrate the concepts, and high-quality clinical photographs support the text throughout.

The book begins with an overview of clinical applications and fundamental principles of TADs. It then goes on to cover biomechanical considerations for controlling target tooth movement with TADs. Biomechanical simulations for various clinical scenarios treated with TADs are addressed next, followed by an examination of histological aspects during the healing process and anatomical considerations with TADs. Other chapters cover: Class II Correction with TADs, Distalization with TADs, TAD-anchored Maxillary Protraction, Maxillary Expansion with TADs, Anterior Open Bite Correction with TADs, TAD-assisted Aligner Therapy, TADs vs. Orthognathic Surgery; Legal Considerations When Using TADs; and much more.

- Provides evidence-based information on the use of TADs, with a focus on improving outcomes for patients
- Considers topics ranging from diagnosis and treatment planning to specific clinical applications and appliances
- Takes a real-world clinical approach, with case studies demonstrating concepts
- Written by international experts in the field
- Presents hundreds of high-quality clinical photographs to support the text

*Temporary Anchorage Devices in Clinical Orthodontics* is an essential resource for orthodontists and orthodontic residents.



## Treating the Complete Denture Patient

Carl F. Driscoll & William Glen Golden

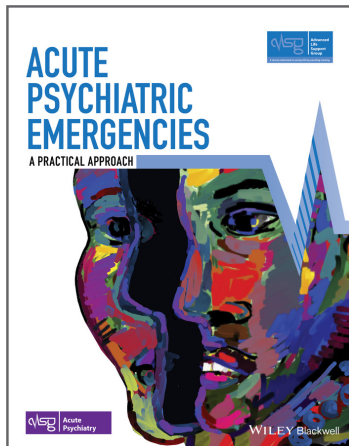
ISBN: 978-1-119-56958-9 • Mar 2020 • 312pp

This book presents step-by-step procedures for all techniques, materials, and methods associated with the use of complete dentures in dental practice. Written for dental students, dental general practitioners, and laboratory technicians, the book provides a practical approach to the complete denture patient. More than 800 photographs illustrate the text, making it easy to follow and apply in the practice or laboratory.

*Treating the Complete Denture Patient* covers all topics related to complete dentures, from the initial appointment and impressions to insertion and troubleshooting. Chapters discuss the diagnostic appointment, covering the analyzing of and treatment planning for edentulous patients; the making of preliminary impressions for the beginning stages of treatment; custom trays for final impression appointments; and much more.

- Presents easy-to-use, clinically relevant information on all topics related to complete dentures
- Covers all the steps associated with providing complete dentures, from the initial appointment and impressions to inserting and troubleshooting problems
- Features hundreds of high-quality color photographs to depict the concepts discussed
- Includes access to a companion website offering video clips

*Treating the Complete Denture Patient* is an essential resource for dental general practitioners, dental students, and laboratory technicians.



**Series:** Advanced Life Support Group

**ISBN:** 978-1-119-50106-0

Mar 2020 • 128pp

# Acute Psychiatric Emergencies

ALSG

Rights Already licensed in French



*Acute Psychiatric Emergencies* is designed for all medical and healthcare professionals working with patients in mental health crisis. This manual is a key component of the Acute Psychiatric Emergencies (APEX) course, which uses a structured approach developed by leading psychiatry and emergency medicine specialists with years of practical experience.

This valuable resource provides a practical approach for dealing with mental health emergencies, helping healthcare professionals from different specialties speak a common language and develop a shared understanding that expedites excellent care. The manual outlines the assessment and management of patients who have self-harmed, those that are apparently drunk, the patient behaving strangely, the patient with acute confusion, and those that are aggressive.

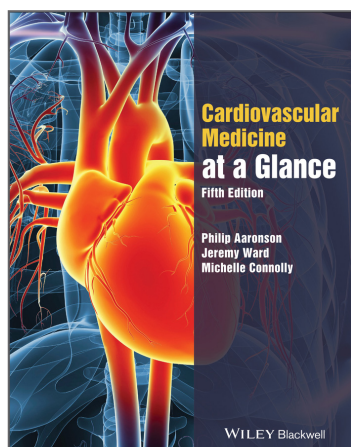
- Presents a structured, practical approach for the emergency care of patients presenting in acute psychiatric crisis
- Covers common presentations of psychiatric emergencies
- Emphasises close co-operation of emergency and mental health teams
- Offers content designed jointly by practicing psychiatrists and emergency physicians from the Advanced Life Support Group (ALSG)

*Acute Psychiatric Emergencies* will be useful for practitioners of emergency medicine, psychiatry, emergency and mental health nursing as well as other mental health and crisis care professionals.

## About the Authors

**The Advanced Life Support Group (ALSG)**, Manchester UK, began life in 1990 and became a registered medical education charity in 1993. The organisation exists to “preserve life by providing training and education to the general public and in particular but not exclusively to doctors, nurses and other members of the medical profession, in life saving techniques”.





**Series:** At a Glance

**ISBN:** 978-1-119-24578-0

**Previous Edition:**  
978-0-470-65594-8

May 2020 • 152pp

## The Cardiovascular System at a Glance, 5th Edition

Philip I. Aaronson, Jeremy P. T. Ward & Michelle J. Connolly

Previous Editions Licensed in 4E sold in Spanish, Greek, Hungarian, Turkish



### Everything you need to know about the cardiovascular system... *at a Glance!*

*The Cardiovascular System at a Glance* is the essential reference guide to understanding all things circulatory. Concise, accessible, and highly illustrated, this latest edition presents an integrated overview of the subject, from the basics through to application. Featuring brand new content on stroke, examination and imaging, heart block and ECGs, and myopathies and channelopathies, *The Cardiovascular System at a Glance* goes one step further and offers new and updated clinical case studies and multiple-choice questions on a supplementary website.

- Integrates basic science and clinical topics
- Offers bite-size chapters that make topics easy to digest
- Includes coverage of anatomy and histology, blood and haemostasis, cellular physiology, form and function, regulation and integration of cardiovascular function, history, examination and investigations, pathology and therapeutics
- Filled with highly visual, colour illustrations that enhance the text and help reinforce learning

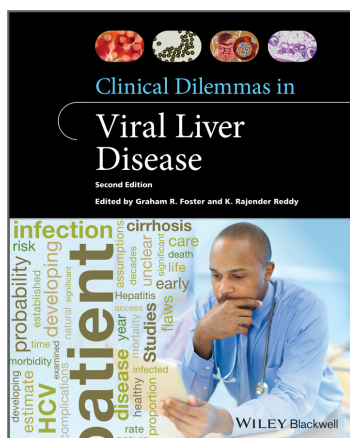
The fifth edition of *The Cardiovascular System at a Glance* is an ideal resource for medical students, junior doctors, students of other health professions, and specialist cardiology nurses.

### About the Authors

**Philip Aaronson** is Reader in Pharmacology and Therapeutics at King's College, London.

**Jeremy Ward** is Head of Department of Physiology and Professor of Respiratory Cell Physiology at King's College, London.

**Michelle Connolly** is Academic Foundation Doctor at the Royal Free Hospital, London.



**Series:** Clinical Dilemmas (UK)

**ISBN:** 978-1-119-53339-9

**Previous Edition:**  
978-1-4051-7905-8

May 2020 • 311pp

## Clinical Dilemmas in Viral Liver Disease, 2nd Edition

K. Rajender Reddy & Graham Foster

Previous Editions Licensed in 1E sold in Simplified Chinese

**The only evidence-based book to approach viral liver disease by focusing exclusively on the clinical dilemmas encountered by hepatologists and their medical teams**

Although viral hepatitis is a growing public health risk around the world, the World Health Organization (WHO) views the elimination of hepatitis infection over the next several as an achievable goal. Effective pharmaceutical therapies are now available, yet medical teams caring for patients with viral hepatitis are challenged when looking for answers to specific questions in the current medical literature. The second edition of *Clinical Dilemmas in Viral Liver Disease* provides evidence-based guidance for medical teams involved in diagnosing, treating, and managing patients with viral liver disease.

This fully updated book explores developments in new treatments and new diagnostic approaches that are contributing to WHO goals of viral elimination. Brief, easily referenced chapters examine clearly defined topics, addressing the clinical questions and difficulties encountered by medical teams in day-to-day practice. Contributions by an international team of investigators and clinicians address clinical questions and issues which are seldom found in standard textbooks and online repositories. Offering practical guidance on the specific challenges and dilemmas of treating viral liver disease, this unique volume:

- Provides practical, evidence-based guidance on topical and controversial issues
- Addresses understudied questions that arise in day-to-day clinical practice
- Discusses the challenges surrounding global elimination programs
- Presents focused approach that is supported by current literature and expert opinion

The second edition of *Clinical Dilemmas in Viral Liver Disease* is required reading for practicing and trainee hepatologists, gastroenterologists, transplant surgeons, virologists, and other practitioners involved in caring for patients with liver disease.

### About the Authors

**Rajender Reddy** MD, FACP, FACP, FRCP Professor of Medicine, Professor of Medicine in Surgery, Director of Hepatology, Medical Director of Liver Transplantation, University of Pennsylvania, PA, USA

**Graham R Foster** PhD FRCP Professor of Hepatology, Queen Marys University of London, Blizard Institute of Cell & Molecular Science, The Royal London Hospital, London, UK K.





## Clinical Paediatric Dietetics, 5th Edition

# Clinical Paediatric Dietetics, 5th Edition

Vanessa Shaw

Previous Editions Licensed in 4E sold in Turkish

*Clinical Paediatric Dietetics, Fifth Edition* continues to provide a very practical approach to dietary management of children with an extensive range of disorders. Thoroughly revised to reflect the most recent scientific and medical literature, this new edition proves to be an indispensable guide for both acute and community-based healthcare professionals.

New and expanded content covering a range of disorders, treatments and guidelines has been introduced to the fifth edition, from diabetes technology and the ketogenic diet, to renal tubular disorders, refeeding syndrome, and blended diets in enteral nutrition. This authoritative volume:

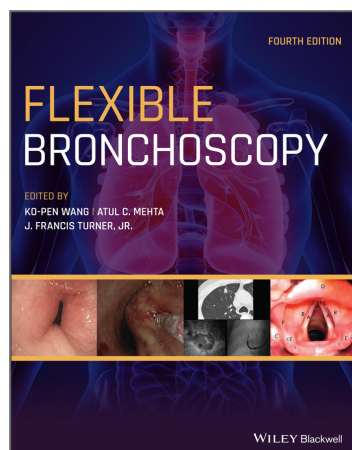
- Supports contemporary evidence-based clinical practice
- Covers inherited metabolic disorders and diseases of all major organ systems
- Provides contributions from practising paediatric dietitians, academic research dietitians and a paediatric psychiatrist
- Includes worked examples, real-world case studies and easy-to-use tables

Endorsed by the British Dietetic Association, *Clinical Paediatric Dietetics, Fifth Edition* is an invaluable resource for all healthcare practitioners caring for children.

ISBN: 978-1-119-46729-8

**Previous Edition:**  
978-0-470-65998-4

Aug 2020 • 832pp



**ISBN:** 978-1-119-38905-7

**Previous Edition:**  
978-1-4051-7587-6

Jul 2020 • 400pp

## Flexible Bronchoscopy, 4th Edition

Ko-Pen Wang, Atul C. Mehta & J. Francis Turner Jr.



Previous Editions Licensed in 3E sold in Turkish and Simplified Chinese

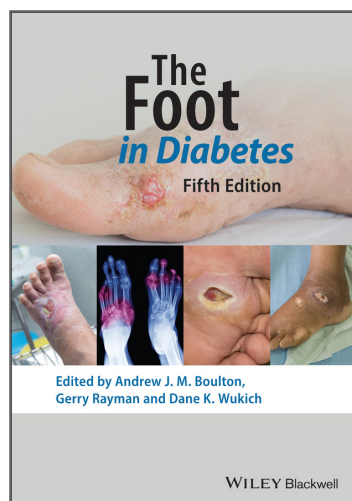
In this fourth edition of the popular Flexible Bronchoscopy, which has been revised and updated throughout, the world's leading specialists discuss the technical and procedural aspects of performing diagnostic and therapeutic bronchoscopy. Four new chapters have been added, taking into account new developments in EBUS and electromagnetic navigation.

### About the Authors

**Ko-Pen Wang, MD**, Director, Interventional Bronchology, Johns Hopkins Bayview Medical Center and Professor of Medicine, Chest Diagnostic Center, Division of Pulmonary Medicine, Harbor Medical Center Baltimore, Maryland, USA

**Atul C Mehta, MB, BS, FACP, FCCP**, Head, Section of Bronchology Staff Physician, Department of Pulmonary and Critical Care Medicine, Head, Section of Bronchology, Medical Director, Lung Transplantation, Cleveland Clinic Foundation, Cleveland, Ohio, USA and Editor-in-Chief, Journal of Bronchology and founding President of the American Association for Bronchology

**J. Francis Turner, Jr., MD, FACP, FCCP, FCCM**, Professor, Vice Chairman, Division of Pulmonary Medicine, Co-Director: Thoracic Oncology, Department of Medicine, University of Tennessee Graduate School of Medicine, USA.



**Series:** Practical Diabetes

**ISBN:** 978-1-119-44581-4

**Previous Edition:**  
978-0-470-01504-9

Jun 2020 • 464pp

## The Foot in Diabetes, 5th Edition

Andrew J. M. Boulton, Gerry Rayman & Dane Wukich

Previous Editions Licensed in 4E sold in Spanish

Fully revised and updated edition of this popular book, addressing all issues concerning the diabetic foot, one of the most prevalent problems in diabetes, with a strong emphasis on practical aspects of delivering care.

### About the Authors

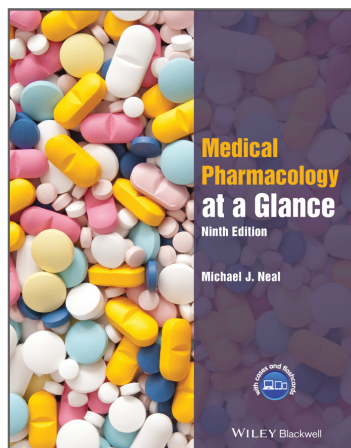
**Professor Andrew JM Boulton**, Department of Medicine, Manchester Royal Infirmary, UK, and University of Miami, USA

**Professor Gerry Rayman**, Consultant Diabetologist, The Diabetes Centre, Ipswich Hospital, East Suffolk and North Essex NHS Foundation Trust, UK.

**Dane K. Wukich**, Professor and Chair, Department of Orthopaedic Surgery, University of Texas Southwestern, Dallas, Texas, USA.







**Series:** At a Glance

**ISBN:** 978-1-119-54801-0

**Previous Edition:**  
978-1-118-90240-0

Mar 2020 • 120pp

## Medical Pharmacology at a Glance, 9th Edition



Michael J. Neal

Previous Editions Licensed in 8E sold in Russia, Greek, Korea, Hungarian, KAZAKH

The internationally best-selling *Medical Pharmacology at a Glance* is the ideal companion for all medical and healthcare students, providing a visual overview of pharmacology, and describing the basic principles of drug action, interaction, absorption, and excretion. Clear and accessible chapters organised around common diseases and conditions facilitate efficient clinical learning, and include references to drug classes and side effects, disease pathophysiology, prescribing guidelines, and more.

Now in its ninth edition, this leading guide has been thoroughly updated to reflect current guidelines and drug information. This edition features new and revised illustrations, additional pedagogical tools, and enhanced online content. Widely recognised as both the best introduction to medical pharmacology and the perfect revision tool for USMLE and pharmacology exams, this invaluable guide:

- Covers a wide range of drugs used to treat conditions such as hypertension, anaemias, cancer, and affective disorders
- Explains drug mechanisms and the principles of drug action
- Discusses practical topics including drug misuse, drug indications, and side effects
- Includes a companion website featuring online cases, flashcards, and a list of core drugs

### About the Author

**Michael J. Neal**, Formerly Chairman of Pharmacology, United Medical and Dental School of Guys and St Thomass Hospital, Emeritus Professor of Pharmacology, Kings College London, UK



## Neonatology at a Glance, 4th Edition

# Neonatology at a Glance, 4th Edition

Tom Lissauer, Avroy A. Fanaroff, Lawrence Miall & Jonathan Fanaroff

Previous Editions Licensed in 3E sold in Greek, Russia; 2E sold in Greek, Spanish, Turkish, German

Written by a team of leading international experts, *Neonatology at a Glance* provides a concise and easy-to-read overview of neonatal medicine. Each topic is clearly explained over a two-page spread, aided by numerous diagrams and illustrations. It has been extensively updated to include recent advances in perinatal medicine, genetics, respiratory support, therapeutic hypothermia, antimicrobial stewardship, and family integrated care. The book covers the wide range of problems encountered in looking after newborn babies, from normal newborn infants to the complexities of neonatal intensive care.

*Neonatology at a Glance:*

- Provides up-to-date coverage of the important conditions you will encounter, including neonatal resuscitation and care of preterm infants
- Covers challenging topics including pain, ethical issues, patient safety, evidence-based medicine, and palliative and end of life care
- Includes details of a wide range of practical procedures, including less invasive surfactant administration, cranial ultrasound, brain monitoring and neuroimaging, and neonatal transport

*Neonatology at a Glance* is the perfect guide for all health professionals looking after newborn infants, including pediatric trainees, medical students, neonatal nurse practitioners and neonatal nurses, therapists, and midwives. For neonatologists, pediatricians, and neonatal lecturers, it is a valuable resource to assist with teaching.

## About the Authors

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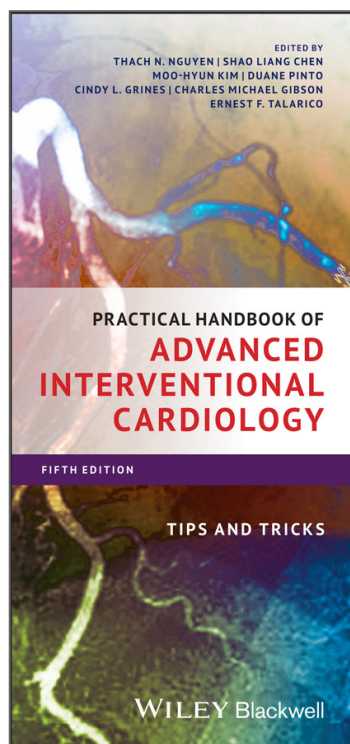
**Jonathan Fanaroff**, MD, JD, FAAP, Professor of Pediatrics, Case Western Reserve University School of Medicine, and Director, Rainbow Center for Pediatric Ethics, Rainbow Babies

**Series:** At a Glance

**Previous Edition:**  
978-1-118-76743-6

**ISBN:** 978-1-119-51319-3

Mar 2020 • 256pp



ISBN: 978-1-119-38268-3

**Previous Edition:**  
978-0-470-67047-7

Jun 2020 • 760pp

# Practical Handbook of Advanced Interventional Cardiology

## Tips and Tricks



Thach N. Nguyen, Shao Liang Chen, Moo-Hyun Kim, Duane Pinto, Cindy L. Grines, Charles Michael Gibson & Ernest F. Talarico

Previous Editions Licensed in 4E sold in Turkish, Korea, Simplified Chinese; 3E sold in Russia

**A concise and convenient pocket guide to interventional cardiology's latest procedures and technologies**

Interventional cardiology is growing more and more integral to the modern-day management of cardiovascular problems. Indeed, trainees are taught interventional methods as a matter of course. With a widening range of options open to them, however, the practicing cardiologist must be diligent and discerning when selecting the appropriate course of action for each patient, adapting their strategy as circumstance demands. Developing the skills and experience necessary to make these key judgments can be a challenging and lengthy process.

Bringing together the knowledge of an international group of over 50 experts, this fifth edition of the *Practical Handbook of Advanced Interventional Cardiology* helps cardiologists of all levels to find interventional solutions to a wide range of problems. Its revised contents cover topics including new devices, valve procedures, and venous and atrial occlusion, and also feature new chapters on bioresorbable vascular scaffolds, protected percutaneous coronary intervention, coronary atherectomy, pulmonary embolism, and more. This essential companion:

- Offers clear, easy-to-follow guidance for cardiology practitioners of all levels of skill and experience
- Grades each strategic or tactical action by level of complexity
- Includes full-color clinical images and illustrations
- Covers all key interventional procedures and techniques
- Provides practical tips and tricks for handling difficult clinical scenarios and complications

The *Practical Handbook of Advanced Interventional Cardiology* is an invaluable resource for both practitioners and trainees in interventional cardiology and all related areas of cardiovascular medicine.

### About the Authors

**Thach Nguyen**, MD, Director of Cardiology, Community Healthcare System, St. Mary Medical Center, Hobart, IN, USA.

**Shao Liang Chen**, MD, FACC, Vice President Professor of Internal Medicine

**Moo-Hyun Kim**, MD, FACC, FSCAI, Director, Regional Clinical Trial Center; Professor, Department of Cardiology, Dong-A University Hospital, Busan, Korea.

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ISBN: 978-1-119-41083-6

**Previous Edition:**  
978-1-4051-3512-2

Mar 2020 • 272pp

# Qualitative Research in Health Care, 4th Edition

Catherine Pope & Nicholas Mays

Previous Editions Licensed in 3E sold in Portuguese, Japanese; 2E sold in Portuguese, Japanese; 1E sold in Japanese

**Provides the essential information that health care researchers and health professionals need to understand the basics of qualitative research**

Now in its fourth edition, this concise, accessible, and authoritative introduction to conducting and interpreting qualitative research in the health care field has been fully revised and updated.

Continuing to introduce the core qualitative methods for data collection and analysis, this new edition also features chapters covering newer methods which are becoming more widely used in the health research field; examining the role of theory, the analysis of virtual and digital data, and advances in participatory approaches to research.

*Qualitative Research in Health Care, 4th Edition* looks at the interface between qualitative and quantitative research in primary mixed method studies, case study research, and secondary analysis and evidence synthesis. The book further offers chapters covering: different research designs, ethical issues in qualitative research; interview, focus group and observational methods; and documentary and conversation analysis.

- A succinct, and practical guide quickly conveying the essentials of qualitative research
- Updated with chapters on new and increasingly used methods of data collection including digital and web research
- Features new examples and up-to-date references and further reading

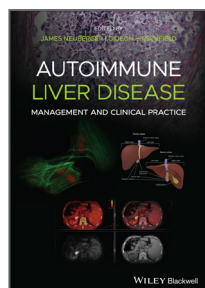
The fourth edition of *Qualitative Research in Health Care* is relevant to health care professionals, researchers and students in health and related disciplines.

## About the Authors

**Catherine Pope** is Professor of Medical Sociology in the Faculty of Health Sciences, University of Southampton, UK. She has played a leading role in developing qualitative methods and evidence synthesis in health services research and is co-author of significant books and journal papers on these methods. Catherine serves on the editorial boards of *Sociology of Health and Illness*, *Digital Health*, and the *Journal of Health Services Research and Policy* and is a past editor of *Sociology*. She is a member of the Health Foundation founding cohort of the Q quality improvement initiative and an elected member of the Academy of Social Sciences Council, Health Services Research UK, and the Society for the Studies in Organising Healthcare.

**Nicholas Mays** is Professor of Health Policy in the Faculty of Public Health and Policy at the London School of Hygiene and Tropical Medicine, UK. He directs the Department of Health funded Policy Innovation Research Unit which is a collaboration between LSHTM, the London School of Economics, Imperial College and other leading health research institutes. He is also co-editor of *Journal of Health Services Research & Policy*.





## Autoimmune Liver Disease

### Management and Clinical Practice

James Neuberger & Gideon M. Hirschfield

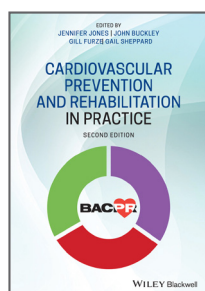
ISBN: 978-1-119-53260-6 • May 2020 • 336pp

#### A practical guide to autoimmune liver diseases through pathogenesis, diagnosis, and management

In *Autoimmune Liver Disease Management and Clinical Practice*, practitioners will learn about the current state of autoimmune liver disease and how to focus on their diagnosis and treatment. The four-part book begins with a thorough investigation of current immunological thinking as it relates to the autoimmunity of the liver. It also covers the four major hepatic autoimmune liver diseases in both adults and children, their management and the role of liver transplantation, and learned approaches to patient management and empowerment.

Expert authors in the field have come together to provide a thorough examination of autoimmune liver disease to help support clinicians assisting patients. The text provides an in-depth look at topics including: viral autoimmune hepatitis

With breadth, depth and current-day relevance, *Autoimmune Liver Disease* sheds light on recent developments in management of liver disease for practitioners, nurses, and health care professionals.



## Cardiovascular Prevention and Rehabilitation in Practice, 2nd Edition

Jennifer Jones, John Buckley, Gill Furze & Gail Sheppard

ISBN: 978-1-118-45869-3 • Apr 2020 • 256pp • Previous Edition: 978-0-632-03934-0

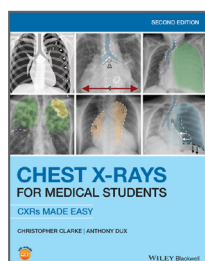
#### The authoritative clinical handbook promoting excellence and best practice

*Cardiovascular Prevention and Rehabilitation in Practice* is a comprehensive, practitioner-focused clinical handbook which provides internationally applicable evidence-based standards of good practice. Edited and written by a multidisciplinary team of experts from the British Association for Cardiovascular Prevention and Rehabilitation (BACPR), this book is invaluable for practitioners helping people with heart disease return to health. The text provides an overview of research findings, examines the core components of cardiac rehabilitation, and discusses how to support healthier lifestyles and reduce the risks of recurrence.

Now in its second edition, this textbook has been fully revised to incorporate recent clinical evidence and align with current national and international guidelines. Increased emphasis is placed on an integrated approach to cardiac rehabilitation programmes, whilst six specified standards and six core components are presented to promote sustainable health outcomes.

- Describes how cardiovascular prevention and rehabilitation programmes can be delivered to meet standards of good practice
- Covers a broad range of topics including: promoting health behaviour change to improve lifestyle risk factors, supporting psycho-social health, managing medical risk factors, and how to develop long-term health strategies
- Emphasises the importance of early programme commencement with assessment and reassessment of patient goals and outcomes, and gives examples of strategies to achieve these
- Discusses the role of programme audit and certification of meeting minimum standards of practice
- Looks to the future and how delivery of cardiovascular prevention and rehabilitation programmes internationally will need to meet common challenges

*Cardiovascular Prevention and Rehabilitation in Practice* is an indispensable resource for all health professionals involved in cardiac rehabilitation and cardiovascular disease prevention.



## Chest X-Rays for Medical Students, 2nd Edition

Christopher Clarke & Anthony Dux

ISBN: 978-1-119-50415-3 • May 2020 • 144pp • Previous Edition: 978-0-470-65619-8

#### Previous Editions Licensed in 1E sold in Portuguese

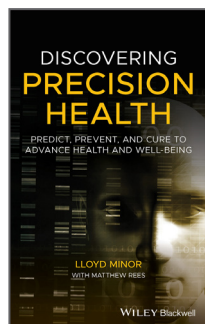
*Chest X-rays for Medical Students* offers a fresh analytical approach to identifying chest abnormalities, helping medical students, junior doctors, and nurses understand the underlying physics and basic anatomical and pathological details of X-ray images of the chest. The authors provide a memorable framework for analysing and presenting chest radiographs, with each radiograph appearing twice in a side-by-side comparison, one as seen in a clinical setting and the second highlighting the pathology.

This new second edition includes significant revisions, improved annotations of X-rays, expanded pathologies, and numerous additional high-quality images. A comprehensive one-stop guide to learning chest radiograph interpretation, this book:

- Aligns with the latest Royal College of Radiologists' Undergraduate Radiology Curriculum
- Offers guidance on how to formulate normal findings
- Features self-assessment tests, presentation exercises, and varied examples
- Includes sections on radiograph quality X-ray hazards and precautions

*Chest X-rays for Medical Students* is an ideal study guide and clinical reference for any medical student, junior doctor, nurse or radiographer.





## Discovering Precision Health

Predict, Prevent, and Cure to Advance Health and Well-Being

Lloyd Minor & Matthew Rees

ISBN: 978-1-119-67269-2 • Apr 2020 • 288pp

**Today we are on the brink of a much-needed transformative moment for health care.**

The U.S. health care system is designed to be reactive instead of preventive. The result is diagnoses that are too late and outcomes that are far worse than our level of spending should deliver. In recent years, U.S. life expectancy has been declining.

Fundamental to realizing better health, and a more effective health care system, is advancing the disruptive thinking that has spawned innovation in Silicon Valley and throughout the world. That's exactly what Stanford Medicine has done by proposing a new vision for health and health care. In *Discovering Precision Health*, Lloyd Minor and Matthew Rees describe a holistic approach that will set health care on the right track: keep people healthy by preventing disease before it starts and personalize the treatment of individuals precisely, based on their specific profile.

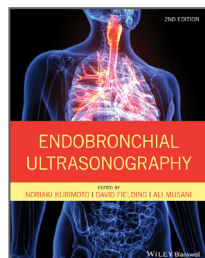
With descriptions of the pioneering work undertaken at Stanford Medicine, complemented by fascinating case studies of innovations from entities including the Chan Zuckerberg Biohub, GRAIL, and Impossible Foods, Minor and Rees present a dynamic vision for the future of individual health and health care. You'll see how tools from smartphone technology to genome sequencing to routine blood tests are helping avert illness and promote health. And you'll learn about the promising progress already underway in bringing greater precision to the process of predicting, preventing, and treating a range of conditions, including allergies, mental illness, preterm birth, cancer, stroke, and autism.

The book highlights how biomedical advances are dramatically improving our ability to treat and cure complex diseases, while emphasizing the need to devote more attention to social, behavioral, and environmental factors that are often the primary determinants of health.

The authors explore thought-provoking topics including:

- The unlikely role of Google Glass in treating autism
- How gene editing can advance precision in treating disease
- What medicine can learn from aviation.

*Discovering Precision Health* showcases entirely new ways of thinking about health and health care and can help empower us to lead healthier lives.



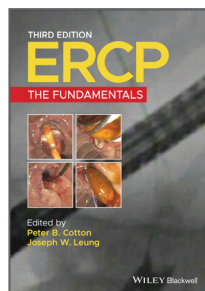
## Endobronchial Ultrasonography, 2nd Edition

Noriaki Kurimoto, David Fielding & Ali Musani

ISBN: 978-1-119-23394-7 • May 2020 • 240pp • **Previous Edition:** 978-1-4051-8272-0

Endobronchial ultrasonography (EBUS) is an exciting and still developing diagnostic tool that has added significantly to the diagnosis and staging of lung cancer and other thoracic diseases. Co-authored by one of the technology's pioneers, this book helps the reader to use EBUS to diagnose and stage lung cancer and a variety of different tumours of the chest region.

The second edition of *Endobronchial Ultrasonography* covers all of the standard techniques and the very latest developments and guidelines involved in EBUS, combining two common procedures, bronchoscopy and real-time ultrasonography, allowing physicians to obtain precise biopsies of lymph nodes and masses within the chest cavity.



## ERCP, 3rd Edition The Fundamentals

Peter B. Cotton & Joseph W. Leung

ISBN: 978-1-119-60109-8 • Jul 2020 • 456pp • **Previous Edition:** 978-1-118-76941-6

**Previous Editions Licensed in 2E sold in Simplified Chinese**

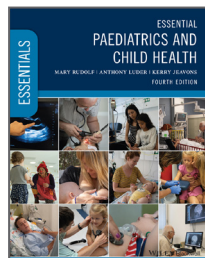
### Provides the comprehensive knowledge required to perform ERCP safely and effectively

Authored by the very best in the field, this “how-to” guide to mastering the crucial yet complex gastrointestinal procedure called endoscopic retrograde cholangiopancreatography (ERCP) covers the entire range of both standard and advanced techniques, using a highly practical approach. It also places a strong emphasis on patient education, safety, and minimizing risks, offering “tips and tricks” and key points throughout to aid rapid understanding. The book is filled with over 250 illustrations

Covering ERCP preparation, techniques, clinical applications, and quality and safety, *ERCP: The Fundamentals, 3rd Edition* begins with chapters on “getting prepared,” including training and competence; facilities and equipment; risk assessment and reduction; sedation, anesthesia, and medications. It then covers “what can be done,” describing standard devices and techniques; intraductal therapies; ampullectomy; and reporting and documentation. Next it has chapters on “what should be done,” clinical applications of ERCP in acute cholangitis; peri-cholecystectomy; difficult bile duct stones; biliary pain; and numerous forms of pancreatitis. The book finishes with coverage of adverse events and how to ensure competent practice.

- Teaches all of the standard and advanced ERCP techniques
- Focuses on patient safety/comfort throughout
- Brilliantly-illustrated with endoscopic, EUS and radiologic images, and anatomical drawings
- Offers a step-by-step, practical approach to ERCP—highlighting potential technical and anatomical hazards
- Packed with tips and tricks boxes and key points boxes to assist comprehension
- 20 high-definition videos of ERCP performed by the experts, perfect to improve clinical technique
- Full reference to the very latest ASGE, ACG, ASG and UEGW guidelines throughout

Brought to you by world pioneers in endoscopy, *ERCP: The Fundamentals, 3<sup>rd</sup> Edition* is an essential purchase for gastroenterologists and endoscopists of all levels.



## Essential Paediatrics and Child Health, 4th Edition

Mary Rudolf, Anthony Luder & Kerry Jeavons

**Series:** Essentials • ISBN: 978-1-119-42022-4 • Mar 2020 • 496pp

*Essential Paediatrics and Child Health* is a comprehensive and practical guide to paediatric disorders as they present to the student and practitioner, offering step-by-step guidance on symptom assessment, history taking, physical examination, investigation and diagnosis, management and treatment, patient education, follow-up and prognosis. With full-colour images and a range of unique and innovative learning features, this completely revised new edition of the award-winning book *Paediatrics and Child Health* will prove an invaluable resource for medical students and junior doctors on their journey through contemporary paediatrics.

- Organises paediatric disorders into system-based chapters for easy navigation, with symptom-based and integrative discussions of all the important diseases and disabilities in paediatrics
- Combines up-to-date descriptions of the latest in basic and clinical science with the core competencies expected of students in paediatric rotations
- Self-directed learning is made easy by means of navigation diagrams, tables, key-point and “at-a-glance” boxes, links to guidelines and other summary aids
- Sections on student experience, self-assessment, doing well in paediatric clinical placements and preparing for examinations and OSCEs
- Includes a completely new introduction with perspectives on the nature of paediatrics and how best to become engaged and immersed within it, and new content on communication, national guidelines, imaging techniques, genetics and epigenetics, prescribing for children toxicology, the latest advances in diagnosing and treating disease, and much more
- Provides a companion website containing physical examination instruction videos, a complete set of interactive patient scenarios and multiple-choice questions

*Essential Paediatrics and Child Health* is the ideal companion for medical students and junior doctors to succeed in their studies and clinical practice.

## Essentials of MRI Safety

### Essentials of MRI Safety

Donald McRobbie

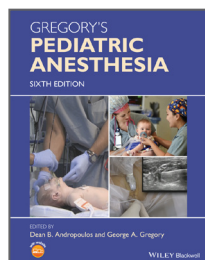
ISBN: 978-1-119-55717-3 • Aug 2020 • 344pp

*Essentials of MRI Safety* is a comprehensive guide that enables practitioners to recognise and assess safety risks and follow appropriate and effective safety procedures in clinical practice. The text covers all the vital aspects of clinical MRI safety, including the bio-effects of MRI, magnet safety, occupational exposure, scanning passive and active implants, MRI suite design, institutional governance, and more.

Complex equations and models are stripped back to present the foundations of theory and physics necessary to understand each topic, from the basic laws of magnetism to fringe field spatial gradient maps of common MRI scanners. Written by an internationally recognised MRI author, educator, and MRI safety expert, this important textbook:

- Reflects the most current research, guidelines, and MRI safety information
- Explains procedures for scanning pregnant women, managing MRI noise exposure, and handling emergency situations
- Prepares candidates for the American Board of MR Safety exam and other professional certifications
- Aligns with MRI safety roles such as MR Medical Director (MRMD), MR Safety Officer (MRSO) and MR Safety Expert (MRSE)
- Contains numerous illustrations, figures, self-assessment tests, key references, and extensive appendices

*Essentials of MRI Safety* is an indispensable text for all radiographers and radiologists, as well as physicists, engineers, and researchers with an interest in MRI.



### Gregory's Pediatric Anesthesia, 6th Edition

George A. Gregory & Dean B. Andropoulos

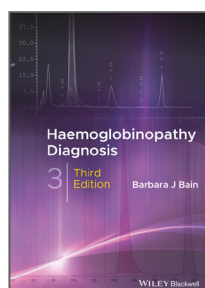
ISBN: 978-1-119-37150-2 • May 2020 • 1344pp • **Previous Edition:** 978-1-4443-3346-6

As the field pediatric anesthesia advances and expands, so too does the gamut of challenges that are faced by today's anesthesiologists. *Gregory's Pediatric Anesthesia* aims to fully prepare trainees and experienced professionals for modern practice by equipping them with the knowledge and cutting-edge techniques necessary to safely and successfully anesthetize children for a range of different surgeries and other procedures. Supporting their work with current data and evidence, the authors explore topics including basic principles, potential complications, and best practice, and illustrate their findings with detailed case studies that cover all major subspecialties.

This essential new edition includes access to illustrative videos and features new and expanded sections, such as:

- Anesthesia for Spinal Surgery complications including postoperative blindness
- Robotic surgery for Pediatric Urological Procedures
- Anesthesia for Non-Cardiac Surgery in Patients with Congenital Heart Disease (new chapter)
- Extensive additional ultrasound images for regional anesthesia
- Neonatal Resuscitation
- The Pediatric Surgical Home and Enhanced Recovery after Surgery (new chapter)

Now in its sixth edition, *Gregory's Pediatric Anesthesia* continues to provide reliable and easy-to-follow guidance to all anesthesiologists caring for younger patients.



### Haemoglobinopathy Diagnosis, 3rd Edition

Barbara J. Bain

ISBN: 978-1-119-57995-3 • May 2020 • 448pp • **Previous Edition:** 978-0-632-05577-7, 978-1-4051-3516-0

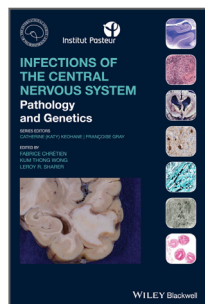
#### An updated, essential guide for the laboratory diagnosis of haemoglobin disorders

This revised and updated third edition of *Haemoglobinopathy Diagnosis* offers a comprehensive review of the practical information needed for an understanding of the laboratory diagnosis of haemoglobin disorders. Written in a concise and approachable format, the book includes an overview of clinical and laboratory features of these disorders. The author focuses on the selection, performance, and interpretation of the tests that are offered by the majority of diagnostic laboratories. The book also explains when more specialist tests are required and explores what specialist referral centres will accomplish. The information on diagnosis is set in a clinical context.

The third edition is written by a leading haematologist with a reputation for educational excellence. Designed as a practical resource, the book is filled with illustrative examples and helpful questions that can aid in the retention of the material presented. Additionally, the author includes information on the most recent advances in the field. This important text:

- Contains a practical, highly illustrated, approach to the laboratory diagnosis of haemoglobin disorders
- Includes "test-yourself" questions and provides an indispensable tool for learning and teaching
- Presents new material on antenatal screening/prenatal diagnostic services
- Offers myriad self-assessment case studies that are ideal for the trainee

Written for trainees and residents in haematology, practicing haematologists, and laboratory scientists, *Haemoglobinopathy Diagnosis* is an essential reference and learning tool that provides a clear basis for understanding the diagnosis of haemoglobin disorders.

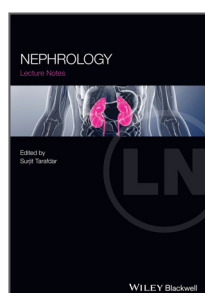


## Infections of the Central Nervous System Pathology and Genetics

Fabrice Chretien, Kum Thong Wong, Leroy R. Sharer, Katy Keohane & Francoise Gray

**Series:** International Society of Neuropathology Series • **ISBN:** 978-1-119-46776-2 • Mar 2020 • 552pp

Highly commended at the British Medical Association (BMA) Awards 2019, this new volume from the *International Society of Neuropathology* series addresses infections of the nervous system, written by expert editors. An expansive and inclusive contents list including rare disorders presented in easily referable chapters, containing; definitions, microbiological characteristics, epidemiology, clinical features, lab tests, pathology, genetics and treatment.



## Lecture Notes Nephrology A Comprehensive Guide to Renal Medicine

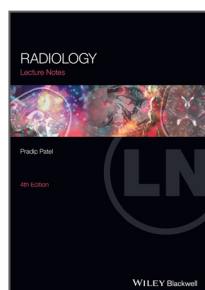
Surjit Tarafdar

**Series:** Lecture Notes • **ISBN:** 978-1-119-05804-5 • Mar 2020 • 320pp

*Lecture Notes: Nephrology* is a concise introduction to the fundamental principles of nephrology. An ideal study guide for medical trainees, this accessible resource combines the depth of a textbook with the accessibility of a handbook. Succinct chapters describe the clinical implications of renal physiology, examine major renal disorders and diseases, and explain a wide range of management and treatment options.

A new addition to the popular *Lecture Notes* series, this handbook provides trainees in nephrology with core subject knowledge and enables medical students to gain a more comprehensive understanding of this complex specialty.

- Offers clear, easy-to-understand coverage of all relevant nephrology topics
- Includes MCQs and discussion around the answers, ideal for those preparing for written Internal Medicine examinations, including the certification examination of the American Board of Internal Medicine, the UK-based MRCP and the Australia and New Zealand-based FRACP examinations
- Features chapter summaries and numerous infographics, tables and figures
- Emphasises core management skills needed by medical students and junior doctors
- Is presented in the consistent and well-recognised *Lecture Notes* format

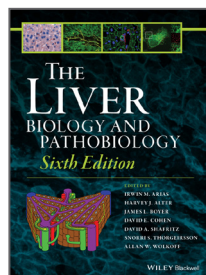


## Lecture Notes: Radiology 4th Edition

Pradip R. Patel

**Series:** Lecture Notes • **ISBN:** 978-1-119-55034-1 • Aug 2020 • 212pp

*Lecture Notes: Radiology* presents the essential core knowledge needed by medical students, junior doctors on the Foundation Programme, specialist nurses and staff in the radiology department. Organized by body systems, it provides a fundamental understanding of radiology as it focuses on imaging techniques, basic film interpretation, and specialized radiological investigation. It emphasizes the pattern of disease as seen on commonly used X-rays and contrast examinations, with explanatory notes on further investigations by imaging techniques such as ultrasound, CT and MRI.



## The Liver, 6th Edition

### Biology and Pathobiology

Irwin M. Arias, Harvey J. Alter, James L. Boyer, David E. Cohen, Snorri Thorgeirsson, David A. Shafritz & Allan W. Wolkoff

ISBN: 978-1-119-43682-9 • Mar 2020 • 1144pp • **Previous Edition:** 978-0-470-72313-5

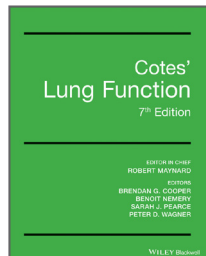
**Bridging the gap between basic scientific advances and the understanding of liver disease – the extensively revised new edition of the premier text in the field.**

The latest edition of *The Liver: Biology and Pathobiology* remains a definitive volume in the field of hepatology, relating advances in biomedical sciences and engineering to understanding of liver structure, function, and disease pathology and treatment. Contributions from leading researchers examine the cell biology of the liver, the pathobiology of liver disease, the liver's growth, regeneration, metabolic functions, and more.

Now in its sixth edition, this classic text has been exhaustively revised to reflect new discoveries in biology and their influence on diagnosing, managing, and preventing liver disease. Seventy new chapters – including substantial original sections on liver cancer and groundbreaking advances that will have significant impact on hepatology – provide comprehensive, fully up-to-date coverage of both the current state and future direction of hepatology. Topics include liver RNA structure and function, gene editing, single-cell and single-molecule genomic analyses, the molecular biology of hepatitis, drug interactions and engineered drug design, and liver disease mechanisms and therapies. Edited by globally-recognized experts in the field, this authoritative volume:

- Relates molecular physiology to understanding disease pathology and treatment
- Links the science and pathology of the liver to practical clinical applications
- Features 16 new “Horizons” chapters that explore new and emerging science and technology
- Includes plentiful full-color illustrations and figures

*The Liver: Biology and Pathobiology, Sixth Edition* is an indispensable resource for practicing and trainee hepatologists, gastroenterologists, hepatobiliary and liver transplant surgeons, and researchers and scientists in areas including hepatology, cell and molecular biology, virology, and drug metabolism.



## Lung Function, 7th Edition

John E. Cotes, Bob Maynard, Sarah Pearce, Benoit Nemery, Peter Wagner & Brendan Cooper

ISBN: 978-1-118-59735-4 • Mar 2020 • 760pp • **Previous Edition:** 978-0-632-06493-9

**The seventh edition of the most authoritative and comprehensive book published on lung function, now completely revised and restructured**

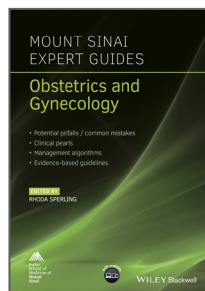
Lung function assessment is the central pillar of respiratory diagnosis. Most hospitals have lung function laboratories where patients are tested with a variety of physiological methods. The tests and techniques used are specialized and utilize the expertise of respiratory physicians, physiologists, and technicians. This new edition of the classic text on lung function is a theoretical textbook and practical manual in one that gives a comprehensive account of lung function and its assessment in healthy persons and those with all types of respiratory disorder, against a background of respiratory, exercise, and environmental physiology. It incorporates the technical and methodological recommendations for lung function testing of the American Thoracic Society and European Respiratory Society.

*Cotes' Lung Function, 7th Edition* is filled with chapters covering respiratory surveys, respiratory muscles, neonatal assessment, exercise, sleep, high altitude, hyperbaria, the effects of cold and heat, respirable dusts, fumes and vapors, anesthesia, surgery, and respiratory rehabilitation. It also offers a compendium of lung function in selected individual diseases and is filled with more diagrams and illustrative cases than previous editions.

- The only text to cover lung function assessment from first principles including methodology, reference values, and interpretation
- Completely re-written in a contemporary style–includes user-friendly equations and more diagrams
- Covers the latest advances in the treatment of lung function, including a stronger clinical and practical bias and more on new techniques and equipment
- Keeps mathematical treatments to a minimum

*Cotes' Lung Function* is an ideal guide for respiratory physicians and surgeons, staff of lung function laboratories, and others who have a professional interest in the function of the lungs at rest or on exercise and how it may be assessed. Physiologists, anthropologists, pediatricians, anesthetists, occupational physicians, explorers, epidemiologists, and respiratory nurses should also find the book useful.





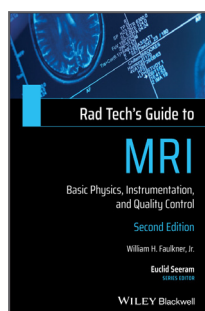
## Obstetrics and Gynecology

Rhoda Sperling

**Series:** Mount Sinai Expert Guides • **ISBN:** 978-1-119-45011-5 • Jul 2020 • 440pp

*Mount Sinai Expert Guides: Obstetrics and Gynecology* provides specialty trainees and junior physicians with an extremely clinical, affordable and accessible handbook covering the key and hot topics in this complex field with focus throughout on clinical diagnosis and effective patient management.

Used as a point-of-care resource in the hospital and clinical setting, it presents the very best in expert information in an attractive, quick and easy to navigate informative and well-structured manner, with features such as key points, potential pitfalls, management algorithms, and national/international guidelines on treatment.



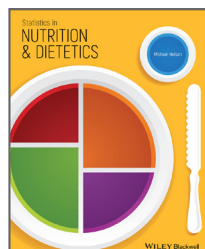
## Rad Tech's Guide to MRI, 2nd Edition

Basic Physics, Instrumentation, and Quality Control

William H. Faulkner Jr. & Euclid Seeram

**Series:** Rad Tech's Guides • **ISBN:** 978-1-119-50857-1 • Apr 2020 • 144pp

This handy reference, revised and updated for this Second Edition, will give the practicing and training technologist a solid understanding of basic MRI principles on which further learning can be built. Beginning with a hardware overview and moving through tissue characteristics, image quality and flow imaging, *Rad Tech's Guide to MRI: Basic Physics, Instrumentation, and Quality Control* should be used as both an introduction and an examination preparation tool. Each book in the Rad Tech's Guide Series covers the essential basics for those preparing for their certifying examinations and those already in practice.



## Statistics in Nutrition and Dietetics

Michael Nelson

**ISBN:** 978-1-118-93064-9 • Mar 2020 • 392pp

*Statistics in Nutrition and Dietetics* is a clear and accessible volume introducing the basic concepts of the scientific method, statistical analysis, and research in the context of the increasingly evidence-based field of nutrition and dietetics. Focusing on quantitative analysis and drawing on short, practical exercises and real-world examples, this reader-friendly textbook helps students understand samples, principles of measurement, confidence intervals, the theoretical basis and practical application of statistical tests, and more.

- Includes numerous examples and exercises that demonstrate how to compute the relevant outcome measures for a variety of tests, both by hand and using SPSS
- Provides access to online resources, including analysis-ready data sets, flow charts, further readings and a range of instructor materials such as PowerPoint slides and lecture notes
- Ideal for demystifying statistical analysis for undergraduate and postgraduate students



## Systematic Reviews in Health Research, 3rd Edition

Matthias Egger, Douglas Altman & George Davey-Smith

**ISBN:** 978-1-4051-6050-6 • Apr 2020 • 520pp

This book has become the standard text on the use of systematic reviews in health research. It is recommended reading for anyone undertaking systematic reviews or needing to understand the principles and methodology used in research papers. It goes beyond explanation, to provide debate on key issues in systematic reviewing.

Written by leading, internationally respected researchers, this is a reference for the informed reviewer but also a valuable resource for those coming to the field for the first time. It is both comprehensive and stimulating – a classic text in its own right.



## Textbook of Surgery, 4th Edition

Julian A. Smith, Andrew H. Kaye, Christopher Christophi & Wendy A. Brown

ISBN: 978-1-119-46808-0 • Mar 2020 • 816pp • Previous Edition: 978-1-4051-2627-4

*Textbook of Surgery* is a core book for medical and surgical students providing a comprehensive overview of general and speciality surgery. Each topic is written by an expert in the field.

The book focuses on the principles and techniques of surgical management of common diseases. Great emphasis is placed on problem-solving to guide students and junior doctors through their surgical training.

## Von Willebrand Disease, 2nd Edition

## Von Willebrand Disease, 2nd Edition

Basic and Clinical Aspects

Augusto B. Federici, Erik E. Berntorp, David Lillicrap & Robert R. Montgomery

ISBN: 978-1-119-41948-8 • Apr 2020 • 324pp • Previous Edition: 978-1-4051-9512-6

*Von Willebrand Disease: Basic and Clinical Aspects* Second Edition describes the important and complex role of von Willebrand factor in hemostasis and thrombosis. In addition to the current understanding of its molecular biology, this book gives particular focus to the association between genetic variants of von Willebrand factor and different von Willebrand disease phenotypes. It also reviews the important area of the obstetric and gynecological manifestations of von Willebrand disease, as well as the treatment of acute bleeding, GI bleeding, and how to prepare VWB patient for surgery. Many advances in agents are included in this updated edition as well as the wide topics such as VWF beyond Hemostasis, in Angiogenesis, and VWF/ADAMTS13 as risk factors of thrombosis. This valuable book is written by an international team of editors and contributors and is a valuable resource for hematologists in practice and in training, and specialists in thrombosis and hemostasis.

## Clinical Medical Imaging Physics

## Clinical Medical Imaging Physics

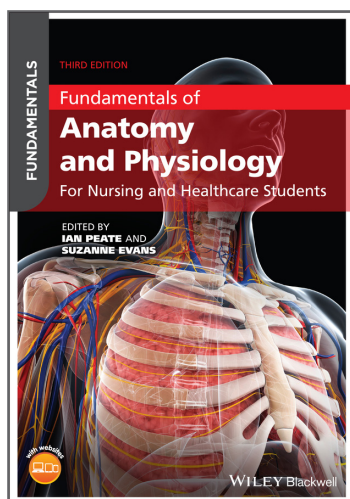
Current and Emerging Practice

Ehsan Samei

ISBN: 978-1-118-75345-3 • Jun 2020 • TBApp

*Clinical Medical Imaging Physics* is based on a course offered at the Radiological Society of North America meeting that is as popular with radiologists as it is with medical imaging physicists. It is the first resource of its kind to address the expanding role of clinical medical physics in radiology and imaging centers around the world. There are several successful texts that address the science and technology of medical imaging. These include Wiley's best-selling Hendee books, *Radiation Therapy Physics* and *Medical Imaging Physics*. However, until now there have been no single-source references that offer both the clinical medical physicist and the radiologist a concise, comprehensive resource that addresses the clinical practice and application of medical physics in imaging. *Clinical Medical Imaging Physics* addresses this glaring deficiency in the reference literature.

*Clinical Medical Imaging Physics* will surely be recognized as the classic reference for the application of medical physics in clinical medical imaging. The book not only provides a single reference for the existing practice of medical physics, but also addresses the growing need to establish an updated approach to clinical medical imaging physics in light of new realities in healthcare practice, such as the expanding role of clinical medical physics and new non-classical challenges of technologies and operational issues in radiology practice. The book is designed as a daily clinical and lab reference and could easily be deployed as a textbook for graduate courses in medical imaging physics. Both medical physicists and radiology residents will also find the book useful as a study review for their respective board exams.



**Series:** Fundamentals

**ISBN:** 978-1-119-57648-8

**Previous Edition:**  
978-1-119-05552-5

Aug 2020 • 608pp

# Fundamentals of Anatomy and Physiology, 3rd Edition

## For Nursing and Healthcare Students

Ian Peate & Suzanne Evans

Previous Editions Licensed in 2E sold in Spanish and Orthodox Chinese

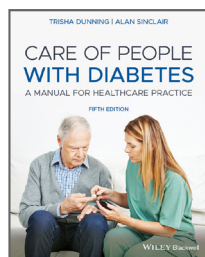
The third edition of *Fundamentals of Anatomy and Physiology* is a concise yet comprehensive introduction to the structure and function of the human body. Written with the needs of nursing and healthcare students in mind, this bestselling textbook incorporates clinical examples and scenarios throughout to illustrate how the topics covered are applied in practice. Hundreds of full-colour illustrations complement numerous case studies encompassing all fields of nursing practice, alongside learning outcomes, self-assessment tests, chapter summaries, and other effective learning tools.

This latest edition has been thoroughly updated by a team of international contributors to reflect the current Nursing and Midwifery Council (NMC) Standards for Education, with enhanced online learning resources including an image bank, a searchable online glossary, flashcards, interactive multiple-choice questions, and more. Offering a user-friendly introduction to anatomy and physiology, this textbook:

- Provides a variety of clinical scenarios and examples to relate theory to practice
- Outlines the disorders associated with each chapter's topic
- Presents information on medicines management for each body system
- Is written by an international team
- Features extensive supplementary online resources for both students and instructors
- Is available with accompanying study guide, *Fundamentals of Anatomy and Physiology Workbook*

*Fundamentals of Anatomy and Physiology* is the perfect introduction to the subject for student nurses, particularly those in the first year of their course, healthcare assistants and nursing associates, and other allied health students.





## Care of People with Diabetes, 5th Edition

### A Manual for Healthcare Practice

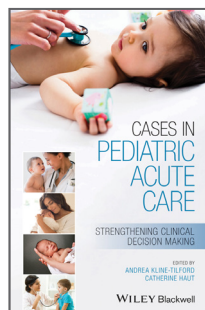
Trisha Dunning & Alan J. Sinclair

ISBN: 978-1-119-52085-6 • Apr 2020 • 616pp

Now in its fifth edition, *Care of People with Diabetes* is a comprehensive clinical manual for nurses, healthcare professionals and students alike, providing an extensive summary of the most up-to-date knowledge in a rapidly developing field, as well as the role of education and self-care in achieving desirable outcomes. Covering both the theory and evidence-based practice of diabetes care, this authoritative volume integrates traditional thinking and innovative concepts to challenge readers to 'think outside the box' when rendering care.

- New and updated content on the pathophysiology of diabetes and the implications for management, how to apply guideline recommendations in practice, and contemporary evidence for best practice diabetes care
- Highlights personalised care and shared, evidence-based decision-making, emphasising the need for effective communication to reduce judgmental language and the negative effect it has on wellbeing and outcomes
- Written by internationally recognised experts in diabetes care, research and education
- Includes a range of learning features, such as practice questions, key learning points, diagrams, and further reading suggestions

*Care of People with Diabetes* is an essential companion to clinical practice for both trainee and experienced nurses and healthcare professionals, particularly those in acute care settings, and students undertaking diabetes courses or preparing for qualification exams.



## Cases in Pediatric Acute Care

### Strengthening Clinical Decision Making

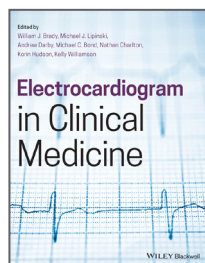
Andrea Kline-Tilford & Catherine Haut

ISBN: 978-1-119-56822-3 • Jun 2020 • 484pp

*Cases in Pediatric Acute Care* presents over 100 real-world pediatric acute care cases, each including a brief patient history, a detailed history of present illness, presenting signs and symptoms, vital signs, and physical examination findings. Ideal for developing a systematic approach to diagnosis, evaluation, and treatment, this resource provides students and advanced practitioners with the tools required to deliver comprehensive care to acute, chronic and critically ill children. The cases encompass a wide range of body systems, medical scenarios, professional issues and general pediatric concerns, and feature laboratory data, radiographic images and information on case study progression and resolution.

- Develops the essential skills necessary to provide the best possible pediatric acute care
- Discusses the most appropriate differential diagnoses, diagnostic evaluation, and management plans for each case
- Presents cases related to pulmonary, cardiac, neurologic, endocrine, metabolic, musculoskeletal, and other body systems
- Highlights key points in each case to quickly identify critical information

*Cases in Pediatric Acute Care* is an excellent resource for advanced practice provider students and pediatric healthcare providers managing acutely ill children.



## Electrocardiogram in Clinical Medicine

William J. Brady

ISBN: 978-1-118-75455-9 • Jun 2020 • 480pp

**Offers a guide for a complete understanding of the disease and conditions most frequently revealed in ECGs recorded in the acute, critical, and emergency care settings**

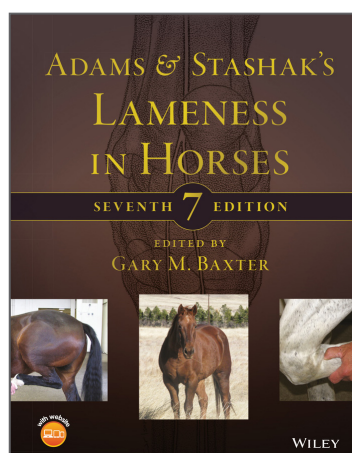
*Electrocardiogram in Clinical Medicine* offers an authoritative guide to ECG interpretation that contains a focus and perspective from each of the three primary areas of medical care: acute care, critical care and emergency care. It can be used as a companion with the book *ECGs for the Emergency Physician I & II* (by Mattu and Brady) or as a stand-alone text. These three books can be described as a cumulative ECG reference for the medical provider who uses the electrocardiogram on a regular basis.

*Electrocardiogram in Clinical Medicine* includes sections on all primary areas of ECG interpretation and application as well as sections that highlight use, devices and strategies. The medical content covers acute coronary syndromes and all related issues, other diseases of the myocardium, morphologic syndromes, toxicology and paediatrics; dysrhythmias will also be covered in detail. This important resource:

- Goes beyond pattern recognition in ECGs to offer a real understanding of the clinical syndromes evidenced in ECGs and implications for treatment
- Covers the indications, advantages and pitfalls of the use of ECGs for diagnosis in all acute care settings, from EMS to ED to Critical Care
- Examines the ECG in toxic, metabolic and environmental presentations; critical information for acute care clinicians who need to be able to differentiate ODs, poisoning and other environmental causes from MI or other cardiac events
- Facilitates clinical decision-making

Written for practicing ER, general medicine, family practice, hospitalist and ICU physicians and medical students, *Electrocardiogram in Clinical Medicine* is an important book for the accurate interpretation of ECG results.





ISBN: 978-1-119-27668-5

**Previous Edition:**  
978-0-8138-1549-7

Jun 2020 • TBAApp

## Adams and Stashak's Lameness in Horses, 7th Edition



Gary M. Baxter

Previous Editions Licensed in 6E sold in Spanish, Simplified Chinese; 5E sold in Portuguese, German

**Provides a fully updated Seventh Edition of the classic gold-standard reference on equine lameness**

This new edition of the go-to resource for equine lameness features updates throughout and more in-depth information on objective lameness assessment, sports medicine, rehabilitation, treatment options, and advanced imaging. With contributions from the world's leading authorities on the subject, the book covers functional anatomy, examination, imaging, lameness of the distal limb, proximal limb, and axial skeleton, principles of musculoskeletal disease, therapies, occupation-related conditions, lameness in young horses, and farriery. More than 1,700 images support the text, making it an exhaustive reference for all aspects of lameness in horses.

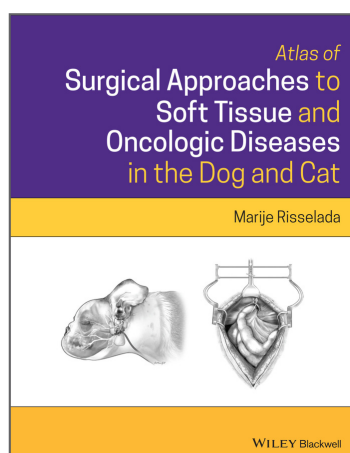
Now in its seventh edition, *Adams and Stashak's Lameness in Horses* continues to be the definitive resource on equine lameness for veterinary specialists, practitioners, interns, residents, and students alike. The book is supplemented with a companion website offering a plethora of "how-to" videos demonstrating lameness examination and select perineural and intrasynovial anesthesia techniques.

- Offers a fully revised new edition of the classic text on equine lameness
- Includes more extensive information on objective lameness assessment, sports medicine, rehabilitation, treatment options and advanced imaging
- Features over 1,700 images to illustrate the concepts described
- Written by internationally renowned experts in the field
- Includes access to a companion website with "how-to" videos

*Adams and Stashak's Lameness in Horses* is a must-have reference for any practicing large animal and equine veterinarian, equine veterinary specialist, or veterinary student dealing with lameness in the horse.

### About the Author

**Gary M. Baxter, VMD, MS, DACVS**, is Associate Dean for Clinical Services at the University of Georgia College of Veterinary Medicine in Athens, Georgia, USA.



**ISBN:** 978-1-119-37013-0

Aug 2020 • 208pp

# Atlas of Surgical Approaches for Soft Tissue and Oncologic Diseases in the Dog and Cat



Marije Risselada

This book offers practical guidance to making approaches for surgery to treat soft tissue and oncologic conditions in canine and feline patients. Every approach is outlined with step-by-step descriptions on how to handle the incision and covers indications and patient positioning. Detailed, high-quality medical illustrations are also included for each, and topics are logically laid out with images on the left and text on the right.

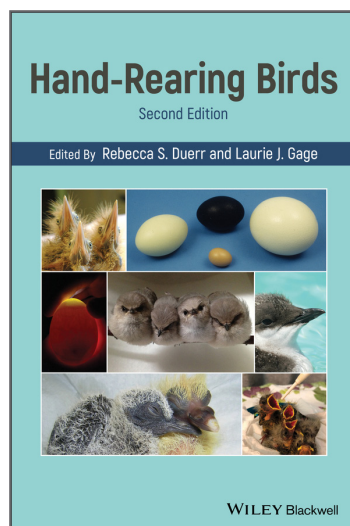
*Atlas of Surgical Approaches to Soft Tissue and Oncologic Diseases in the Dog and Cat* starts with a chapter on oromaxillofacial approaches, followed by chapters covering the cervical area and ear, forelimb, hindlimb, thorax, and abdomen. The book finishes with complete coverage of the approaches to the perineal area and pelvic canal and digits and tail, making it an excellent guide for surgeons to plan and execute their approach to soft tissue and oncologic diseases.

- Describes the complete approach to surgical incisions for soft tissue and oncologic disease, with alternative positions or approaches where appropriate
- Provides a high-quality medical line drawing depicting each approach
- Offers practical guidance for surgeons to direct their approach during surgery
- Covers indications, patient positioning, and step-by-step summaries of each approach
- Follows a logical two-page layout with text on one side and illustrations on the other

*Atlas of Surgical Approaches to Soft Tissue and Oncologic Diseases in the Dog and Cat* is an essential reference for any veterinary surgeon or clinician treating soft tissue and oncologic diseases surgically.

## About the Author

**Marije Risselada**, DVM, PhD, DECVS, DACVS-SA, is an Assistant Professor of Small Animal Soft Tissue Surgery at Purdue University College of Veterinary Medicine, in West-Lafayette, Indiana, USA.



ISBN: 978-1-119-16775-4

**Previous Edition:**  
978-0-8138-0666-2

Mar 2020 • TBAp

## Hand-Rearing Birds, 2nd Edition

Rebecca S. Duerr & Laurie J. Gage



Previous Editions Licensed in 1E sold in Japanese

This book presents a detailed guide to hand-rearing techniques for raising young birds, providing complete coverage of a wide variety of avian species and taxonomic groups for all avian care professionals. Chapters are written by expert rehabilitation, aviculture, and zoo professionals, and include useful references and bibliographies for further reading and research. Each chapter provides valuable information on appropriate intervention, housing, feeding, and care.

*Hand-Rearing Birds, Second Edition* presents 50 chapters, including 12 new chapters on species or groups of species not featured in the previous edition. It also features color photographs that help illustrate many concepts pertinent to birds. This important reference:

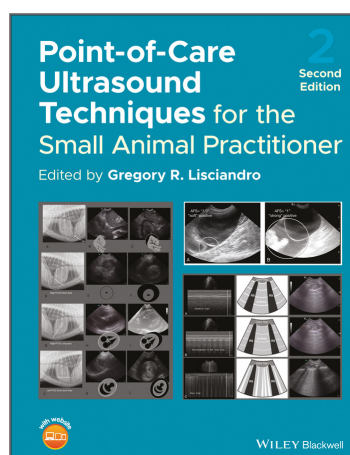
- Offers a detailed guide to hand-rearing techniques including species-specific guides to caring for and raising young birds
- Covers a wide variety of avian species and taxonomic groups
- Discusses how to examine a chick to identify problems such as hypothermia, dehydration, injuries, and common diseases, and what to do
- Combines information on the science and skill needed to successfully hand-rear birds
- Presents full-color photographs throughout

*Hand-Rearing Birds, Second Edition* is an essential resource for avian rehabilitators, breeders, veterinarians, and zoo staff.

### About the Authors

**Rebecca S. Duerr**, DVM, MPVM, PhD, is Clinical Veterinarian and Research Director at International Bird Rescue in California, USA.

**Laurie J. Gage**, DVM, DACZM, is a zoo and wildlife veterinarian from northern California, USA.



**ISBN:** 978-1-119-46098-5

**Previous Edition:**  
978-1-118-36959-3

Jul 2020 • TBApp

# Point-of-Care Ultrasound Techniques for the Small Animal Practitioner, 2nd Edition



Gregory R. Lisciandro

Previous Editions Licensed in 1E sold in Polish, Orthodox Chinese, Japanese, Greek, Spanish

This book offers a thorough revision and update to the first landmark book that presented a standardized approach to focused point-of-care ultrasound exams of the abdomen, thorax, musculoskeletal and eye in veterinary practice. Now incorporating new applications for focused ultrasound exams and additional species, this Second Edition continues to be a state-of-the-art reference for using abbreviated ultrasound exams in clinical practice. A companion website features supplementary video clips of these point-of-care techniques depicting actual ultrasound exams for comparison and comprehension.

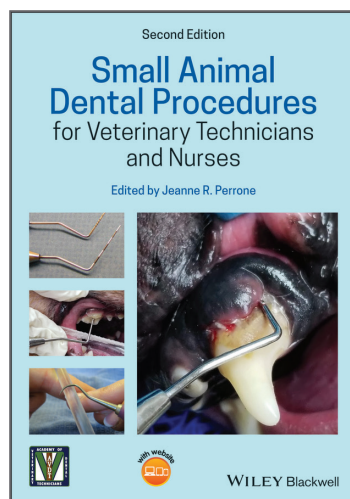
New chapters in *Point-of-Care Ultrasound Techniques for the Small Animal Practitioner, Second Edition* cover ultrasound-guided nerve blocks, musculoskeletal, brain imaging, and applications of focused ultrasound techniques in cats, exotics and marine mammals—making it an essential purchase for veterinarians wanting to incorporate point-of-care ultrasound techniques into their veterinary practices.

- Presents a standardized approach to point-of-care ultrasound as an extension of the physical exam, including trauma, non-trauma, and monitoring applications
- Includes coverage of new techniques for focused ultrasound exams, including lung, anesthesia and ultrasound guided nerve blocks, transcranial brain imaging, musculoskeletal, volume status evaluation, and rapid assessment for treatable forms of shock
- Adds cats, exotic and wildlife mammals, and marine mammals to the existing canine coverage
- Emphasizes the integration of point-of-care ultrasound techniques for optimizing patient care and accurate patient assessment
- Offers access to a companion website with supplementary video clips showing many clinically relevant didactic examples

The second edition of *Point-of-Care Ultrasound Techniques for the Small Animal Practitioner* is an excellent resource for veterinary practitioners, ranging from the general practitioner to nearly all clinical specialists, including internal medicine, oncology, cardiology, emergency and critical care, anesthesiology, ophthalmology, exotics, and zoo medicine specialists, and veterinary students.

## About the Author

**Gregory R. Lisciandro, DVM, Dipl. ABVP, Dipl. ACVECC**, is a consultant with Hill Country Veterinary Specialists and CEO of FASTVet.com in Spicewood, Texas, USA.



ISBN: 978-1-119-45183-9

**Previous Edition:**  
978-0-8138-2075-0

Aug 2020 • 288pp

# Small Animal Dental Procedures for Veterinary Technicians and Nurses, 2nd Edition



Jeanne R. Perrone

Previous Editions Licensed in 1E sold in Simplified Chinese

*Small Animal Dental Procedures for Veterinary Technicians and Nurses, Second Edition* provides a fully revised and updated version of this practical training manual for veterinary technicians and nurses. Offering complete coverage of all aspects of dental treatment for dogs, cats, and exotic pets, the book describes step-by-step techniques for veterinary technicians providing dental care. The Second Edition adds information on digital radiology, with updates to current protocols and improved images throughout the book.

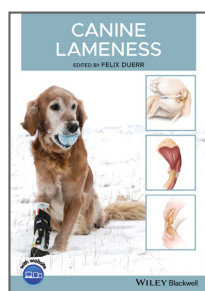
Chapters cover all the steps of the dental exam, from anesthesia and radiology to cleanings, common diseases, and treatment. A companion website offers pedagogical materials such as video clips, review questions, training exercises, forms, and editable glossaries. *Small Animal Dental Procedures for Veterinary Technicians and Nurses* is an essential resource for any veterinary technician or nurse involved with dental examinations and cleanings.

- Offers a thoroughly updated revision to this comprehensive training manual, with updated protocols throughout
- Adds information on digital radiology to reflect current technology
- Covers all aspects of dental treatment relevant to veterinary technicians and nurses
- Written by veterinary technician specialists in dentistry
- Includes access to a companion website with pedagogical materials, including video clips, forms, review questions, training exercises, and editable glossaries

## About the Author

**Jeanne Perrone**, CVT, VTS (Dentistry) is a dentistry technician at Tampa Bay Veterinary Specialists. She also serves as an adjunct instructor for the Veterinary Technician program in dentistry at St. Petersburg College, Dentistry Section Editor for Veterinary Technician magazine, and is a member and former officer of the Academy of Veterinary Dental Technicians.





## Canine Lameness

Felix Duerr

ISBN: 978-1-119-47402-9 • Apr 2020 • 440pp

Written by veterinarians across multiple disciplines with expertise in the canine musculoskeletal system, this book offers an easy-to-use guide for diagnosing lameness in dogs. *Canine Lameness* focuses on evaluation and diagnostic techniques, with descriptions of the most common reasons for lameness. Arranged by anatomical region, this approach complements the clinical assessment of a patient.

Designed for ease of use, the book puts all the information needed to evaluate and diagnose a dog's orthopedic status at the reader's fingertips. Particular emphasis is placed on orthopedic examination, radiographic anatomy, and abnormal radiographic findings.

Features of *Canine Lameness*:

- Offers a comprehensive guide to diagnosing musculoskeletal diseases causing lameness in dogs
- Brings clinical examination, diagnostic imaging, and relevant musculoskeletal anatomy together into a single resource
- Takes a logical, regions-based approach, outlining diagnostic steps and differential diagnoses for each specific area
- Focuses on commonly encountered conditions while highlighting critical diagnostic steps to ensure other, less common, differential diagnoses are not missed
- Includes access to a companion website with video clips demonstrating detailed steps of the examination, techniques, and lameness conditions

*Canine Lameness* is an excellent resource for veterinarians and staff involved in the diagnosis of lameness in dogs, and will be of great benefit to all animal health professionals working in the area of canine orthopedics.

## Equine Hematology, Cytology, and Clinical Chemistry, 2nd Edition

## Equine Hematology, Cytology, and Clinical Chemistry, 2nd Edition

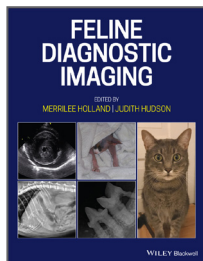
Raquel M. Walton, Rick Cowell & Amy Valenciano

ISBN: 978-1-119-50024-7 • Aug 2020 • TBA • Previous Edition: 978-0-8138-1719-4

*Equine Clinical Pathology, Second Edition* draws on the hematology and clinical chemistry information from the first edition and adds valuable cytopathology and hematology material from *Diagnostic Cytology and Hematology of the Horse*, making it a truly definitive reference to clinical pathology in equids. Thoroughly updated and expanded throughout, the Second Edition offers more images, more information, and new knowledge, particularly in the areas of bone marrow evaluation and cytopathology. This revised edition is a must-have purchase for anyone using hematology, cytology, and clinical chemistry in equine patients.

Designed to present clear, concise, and clinically relevant information, the book is logically organized for easy reference. Chapters begin with lists of abbreviations, and images and tables support the text, with information summarized in text where possible for ease of use. *Equine Clinical Pathology* is a valuable resource for equine practitioners, clinical pathologists and residents, and veterinary students.

- Provides a complete update and expansion to the original text
- Includes cytopathology and hematology material taken from *Diagnostic Cytology and Hematology of the Horse*
- Thoroughly enhanced with more images and new information and advances throughout
- Offers a focus on clinical pathology in the horse, with in-depth information on cytology, hematology, and clinical chemistry in equids
- Presents a comprehensive reference to clinical pathology relevant to horses



## Feline Diagnostic Imaging

Merrilee Holland & Judith Hudson

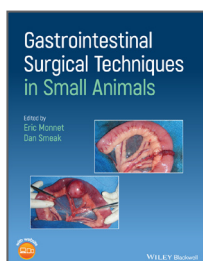
ISBN: 978-1-118-84094-8 • May 2020 • TBAApp

This book offers a comprehensive resource for imaging the feline patient, with an emphasis on the unique considerations of imaging cats. It focuses on radiology and ultrasound, with some coverage of advanced imaging such as computed tomography and magnetic resonance imaging. Incorporating more than 1750 high-quality images, it is an invaluable reference for any veterinary practitioner with a significant feline caseload.

*Feline Diagnostic Imaging* begins with information on the radiographic evaluation of the thorax, abdomen, and musculoskeletal structures, including normal anatomy and pathology, followed by a review of common echocardiographic and abdominal ultrasound findings and abnormalities. Advanced imaging of the skull using computed tomography and magnetic resonance imaging cases of brain and spinal disease are also included. The book:

- Provides imaging information specifically tailored to the particular needs of cats
- Emphasizes the modalities most commonly used in general practice, with some discussion of advanced imaging
- Gives a complete overview of diagnostic imaging for the feline patients
- Includes tips and tricks for the unique considerations of working with cats
- Presents essential information for any practitioner treating feline patients

Offering a feline focus not found in other imaging books, *Feline Diagnostic Imaging* is an essential purchase for veterinarians wishing to improve their diagnostic imaging skills in cats. It's also an excellent guide for veterinary radiologists, and veterinary students and residents.



## Gastrointestinal Surgical Techniques in Small Animals

Eric Monnet & Dan Smeak

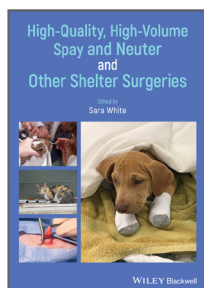
ISBN: 978-1-119-36920-2 • May 2020 • 344pp

*Gastrointestinal Surgical Techniques in Small Animals* offers a highly detailed reference to surgical procedures in the gastrointestinal tract in dogs and cats. Each chapter describes the surgical techniques in depth, featuring high-quality illustrations depicting each step, and discusses tips and tricks for a successful surgery and potential complications. A companion website offers video clips demonstrating the procedures.

Logically divided into sections by anatomy, each chapter covers indications, contraindications, and decision making for a specific surgery. Tips and tricks and potential complications are also covered.

- Describes techniques for canine and feline gastrointestinal surgery in detail
- Presents the state of the art for GI surgery in dogs and cats
- Includes access to a companion website with video clips demonstrating techniques

*Gastrointestinal Surgical Techniques in Small Animals* is an essential resource for small animal surgeons and veterinary residents.



## High-Quality, High-Volume Spay and Neuter and Other Shelter Surgeries

Sara White

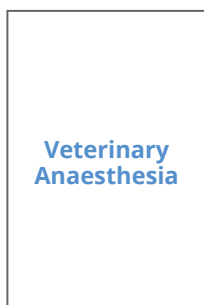
ISBN: 978-1-118-51720-8 • Mar 2020 • 672pp

This comprehensive reference provides veterinarians with everything they need to know about performing surgeries such as spaying and neutering in busy animal shelters. It includes surgical and anesthetic techniques, perioperative procedures, reproductive medicine, and program management regarding dogs, cats, rabbits, and other small mammals.

With more than 550 full-color images, *High-Quality, High-Volume Spay and Neuter and Other Shelter Surgeries* provides spay-neuter and shelter veterinarians with information on the most current clinical techniques. Dozens of veterinary experts offer their expert advice and knowledge on perioperative care, surgery instrumentation, infectious disease control, anesthesia protocols, CPR, the fundamentals of HQHSN, and more.

- Covers all aspects of common shelter surgeries, including surgical and anesthetic techniques, perioperative procedures, reproductive medicine, and program management
- Provides coverage of dogs, cats, rabbits, and other small mammals
- Written by leaders in the field with experience in surgery, medicine, spay-neuter practice, teaching, and research

*High-Quality, High-Volume Spay and Neuter and Other Shelter Surgeries* is an excellent resource for veterinarians, veterinary technicians, and students, as well as clinic and shelter owners.



## Veterinary Anaesthesia

Principles to Practice

Alexandra A Dugdale

ISBN: 978-1-119-24677-0 • Jul 2020 • 448pp • **Previous Edition:** 978-1-4051-9247-7

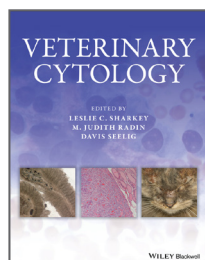
**Thorough revision of a comprehensive and highly readable textbook on veterinary anaesthesia**

A popular book amongst veterinary students and veterinary anaesthesia residents, the new edition of *Veterinary Anaesthesia: Principles to Practice* continues to be a comprehensive textbook covering the key principles of veterinary anaesthesia, encompassing a wide range of species.

Fully revised, the information is summarised in a simple, accessible format to help readers navigate and locate relevant information quickly. Filled with technical and species-based chapters, it offers a quick reference guide to analgesic infusions, as well as emergency drug dose charts for canines, felines, and equines.

- Provides broad coverage of the basics of veterinary anaesthesia and how it is implemented in clinical practice
- Includes new information on mechanisms of general anaesthesia
- Features new and improved photographs and line illustrations, plus end of chapter questions to test your knowledge
- Covers veterinary anaesthesia for a wide range of species, including dogs, cats, horses, rabbits, donkeys, and pigs
- Expands example case material to increase relevance to day-to-day clinical practice

Updated to contain the latest developments in the field, *Veterinary Anaesthesia: Principles to Practice* is designed specifically for veterinary students and those preparing to take advanced qualifications in veterinary anaesthesia. It is also a useful reference for veterinarians in practice and advanced veterinary nurses and technicians.



## Veterinary Cytology

Leslie C. Sharkey, M. Judith Radin & Davis Seelig

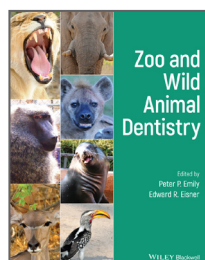
ISBN: 978-1-119-12570-9 • May 2020 • TBApp

This book offers a state-of-the-art, evidence-based reference to all aspects of veterinary cytology. Truly multidisciplinary in its approach, chapters are written by experts in fields ranging from clinical pathology to internal medicine, surgery, ophthalmology, and dermatology, drawing the various specialties together to create a comprehensive picture of cytology's role in diagnosis and treatment of animal disease. Firmly grounded in the primary literature, the book focuses on companion animals, with special chapters for species with fewer publications. Chapters are logically organized by body system, with additional chapters on tumors of particular import and diagnostic decision making.

The first two sections of *Veterinary Cytology* focus on cytology techniques, quality control, and special laboratory techniques. Subsequent sections are organ/tissue-based and reflect what is known about the canine, feline, and equine species. This is followed by chapters on non-traditional species, including exotic companion mammals, rabbits, cattle, camelids, non-human primates, reptiles and birds, amphibians, fish, invertebrates, and sheep and goats. The last section highlights some unique features of the applications of cytology in industry settings.

- Provides a gold-standard reference to data-driven information about cytologic analysis in companion animal species
- Brings together authors from a wide range of specialties to present a thorough survey of cytology's use in veterinary medicine
- Offers broader species coverage and greater depth than any cytology reference currently available

*Veterinary Cytology* is an essential resource for clinical and anatomic pathologists and any specialist in areas using cytology, including veterinary oncologists, criticalists, surgeons, ophthalmologists, dermatologists, and internists.



## Zoo and Wild Animal Dentistry

Peter P. Emily & Edward R. Eisner

ISBN: 978-1-119-54581-1 • Aug 2020 • 512pp

*Zoo and Wild Animal Dentistry* is the first book to offer a comprehensive reference to oral pathology and dental therapy in captive and wild exotic animals. Comprehensive in scope, the book is authored by noted experts on the topic who cover dental care for a broad range of species with an emphasis on oral health. Designed as a practical resource for treating exotic animals, the book is filled with instructive photographs and illustrations that clearly depict pathologies and demonstrate techniques.

The book draws on the editors' and contributors' years of experience with exotic animals to offer a reliable resource to the history of veterinary dentistry, information on the evolution of teeth, practical dental therapeutics, and oral descriptions for each of the more than three hundred species included in the book.

*Zoo and Wild Animal Dentistry* covers a wide range of zoo and wild species, including cats, bears, primates, dogs, raccoons, weasels, hyenas, marsupials, herbivores, edentates, sea mammals, birds, reptiles, and more. This important resource:

- Offers a comprehensive reference to oral pathology and dental therapy in captive and wild animals
- Highlights oral health to promote overall health
- Includes information on the most recent advances in the field
- Contains a groundbreaking resource for the dental care of exotic animals

Written for zoo and wildlife caretakers and veterinarians, veterinary dentists, veterinary technicians, and veterinary students, *Zoo and Wild Animal Dentistry* is a practical resource that has information for the dental care of a wide range of animal species that are all too often neglected.

**Notes on  
Veterinary  
Dentistry**

**Notes on Veterinary Dentistry**

Cedric Tutt

**Series:** Notes on • **ISBN:** 978-1-4051-6951-6 • Apr 2020 • 304pp

Comprehensive coverage of companion animal dentistry, covering dogs, cats, rabbits and rodents, as well as horses. A part of the popular "Notes On" series, designed to provide quick and easy access to clinical and diagnostic information in a convenient note-based style.



# Natural Sciences



### Zoo Animal Learning and Training

#### Zoo Animal Learning and Training

Vicky A. Melfi, Nicole Dorey & Samantha J Ward

ISBN: 978-1-118-96853-6 • Mar 2020 • 384pp

#### Comprehensively explains animal learning theories and current best practices in animal training within zoos

This accessible, up-to-date book on animal training in a zoo/aquaria context provides a unified approach to zoo animal learning, bringing together the art and science of animal training. Written by experts in academia and working zoos, it incorporates the latest information from the scientific community along with current best practice, demystifying the complexities of training zoo animals. In doing so, it teaches readers how to effectively train animals and to fully understand the consequences of their actions.

*Zoo Animal Learning and Training* starts with an overview of animal learning theory. It describes the main categories of animal learning styles; considers the diverse natural history of zoo animals; reviews the research undertaken which demonstrates ultimate benefits of learning; and highlights the advantages and disadvantages of the different approaches. It also shows how the direct application of learning theory can be integrated into zoo animal management; discusses how other factors might affect development; and investigates situations and activities from which animals learn. It also explores the theoretical basis that determines whether enrichments are successful.

- Provides an easily accessible, jargon-free introduction to the subject
- Explores different training styles, providing theoretical background to animal learning theory as well as considerations for practical training programme – including how to set them up, manage people and animals within them and their consequences
- Includes effective skills and 'rules of thumb' from professional animal trainers
- Offers commentary on the ethical and welfare implications of training in zoos
- Features contributions from global experts in academia and the zoo profession
- Uniquely features both academic and professional perspectives

*Zoo Animal Learning and Training* is an important book for students, academics and professionals. Suited to senior undergraduate students in zoo biology, veterinary science, and psychology, and for post-graduate students in animal management, behaviour and conservation, as well as zoo biology. It is also beneficial to those working professionally in zoos and aquaria at different levels.

### Predator-Prey Ecology

#### Predator-Prey Ecology

##### Individuals, Populations and Communities

Dennis L. Murray & Dr Stan Boutin

ISBN: 978-1-4443-5006-7 • Aug 2020 • 320pp

The relationship between predators and their prey has received longstanding interest from biologists and ecologists. Clearly, predation events draw instinctive attention, and this may partly explain why predation typically elicits greater fascination compared to other consumptive activities such as herbivory, parasitism, or cannibalism. More importantly, predator-prey interactions are of interest because they occur across a broad range of taxonomic groups, involve species with adversarial relationships and thus may not occur without complex dynamics, and are known to play a critical role in shaping most ecosystems. Predator-prey ecology includes aspects of evolutionary ecology, behavioural ecology, population biology, community dynamics, wildlife management, biological control, and conservation biology. This implies that a broad range of students and scientists should benefit from a comprehensive synthesis of predator-prey interactions.

Although predator-prey interactions have received substantive research attention in recent decades and several significant advances in our understanding have occurred, there currently lacks a comprehensive treatise summarizing the most salient aspects of such relationships. This deficiency is especially apparent with respect to predator-prey interactions among vertebrates, and is surprising given the many recent books focusing on other types of consumer-resource dynamics. This implies that there should be a niche for a comprehensive and innovative book emphasizing the behavioural and population ecology of predator-prey interactions.

*Predator-Prey Ecology* will review current understanding and recent developments in predator-prey ecology, with emphasis on linking theory and empirical findings, and drawing commonalities and distinctions between taxonomic groups. We will focus on: i) predator-prey coevolutionary processes and evidence of predation in the fossil record; ii) predator hunting behaviour and prey adaptive responses to predation risk, iii) theory, mathematical models, and real-world dynamics of predator-prey populations, and iv) predator-prey interactions across spatial and temporal scales and in multi-species ecosystems. Throughout, we will illustrate the evolution of thought regarding predator-prey ecology, and emphasize gaps in our knowledge as well as future research needs. The concluding chapter will assemble various concepts discussed in previous chapters into a broad synthesis, using the *classic* predator-prey relationship involving Canada lynx and snowshoe hares as a case study; both authors have extensive experience with this particular predator-prey system, and the final chapter will present an opportunity to demonstrate how many of the key points elucidated in previous chapters are exemplified by the lynx-hare system. The target audience will include advanced undergraduate and graduate students taking specialized courses in predator ecology, community ecology, and related disciplines, as well as scientists and other professionals needing a desktop reference on predator-prey interactions.

### Practical Field Ecology, 2nd Edition

## Practical Field Ecology, 2nd Edition

### A Project Guide

C. Philip Wheater, James R. Bell & Penny A. Cook

ISBN: 978-1-119-41322-6 • Mar 2020 • 400pp • Previous Edition: 978-0-470-69428-2

**Offers a comprehensive, accessible introduction to experimental design, field monitoring skills for plants and animals, data analysis, interpretation and reporting**

This user-friendly book presents field monitoring skills for both plants and animals, within the context of a research project. This text provides a single resource to take the reader all the way through from the planning stage, into the field, guiding through sampling, organism identification, computer-based data analysis and interpretation, and finally how to present the results to maximise the impact of the work. Logically structured throughout, and revised extensively in the second edition, the book concentrates on the techniques required to design a field-based ecological survey and shows how to execute an appropriate sampling regime. It evaluates appropriate sampling and analytical methods, identifying potential problems associated with various techniques and how to mitigate these.

The second edition of this popular text has updated reference material and weblinks, increased the number of case studies by 50% to illustrate the use of specific techniques in the field, added over 20% more figures (including 8 colour plates), and made more extensive use of footnotes to provide extra details. Extensions to topics covered in the first edition include additional discussion of: ethical issues; statistical methods (sample size estimation, use of the statistical package R, mixed models); bioindicators, especially for freshwater pollution; seeds, fecundity and population dynamics including static and dynamic life tables; forestry techniques including tree coring and tree mortality calculations; the use of data repositories; writing for a journal and producing poster and oral presentations. In addition, the use of new and emerging technologies has been a particular focus, including mobile apps for environmental monitoring and identification; land cover and GIS; the use of drones including legal frameworks and codes of practice; molecular field techniques including DNA analysis in the field (including eDNA); photo-matching for identifying individuals; camera trapping; modern techniques for detecting and analysing bat echolocation calls; and data storage using the cloud.

Divided into six distinct chapters, *Practical Field Ecology, 2nd Edition* begins at project inception with a chapter on planning—covering health and safety, along with guidance on how to ensure that the sampling and experimental design is suitable for subsequent statistical analysis. Following a chapter dealing with site characterisation and general aspects of species identification, subsequent chapters describe the techniques used to survey and census particular groups of organisms. The final chapters cover analysing, interpreting and presenting data, and writing up the research.

- Offers a readable and approachable integrated guide devoted to field-based research projects
- Takes students from the planning stage, into the field, and clearly guides them through organism identification in the laboratory and computer-based data analysis, interpretation and data presentation
- Includes a chapter on how to write project reports and present findings in a variety of formats to differing audiences

Aimed at undergraduates taking courses in Ecology, Biology, Geography, and Environmental Science, *Practical Field Ecology, 2nd Edition* will also benefit postgraduates seeking to support their projects.

## ASTRONOMY &amp; ASTROPHYSICS

### Astrobiology, 2nd Edition

## Astrobiology, 2nd Edition

### Understanding Life in the Universe

Charles S. Cockell

ISBN: 978-1-119-55035-8 • Jun 2020 • 500pp

**A guide to understanding the formation of life in the Universe**

The revised and updated second edition of *Astrobiology* offers an introductory text that explores the structure of living things, the formation of the elements required for life in the Universe, the biological and geological history of the Earth, and the habitability of other planets. Written by a noted expert on the topic, the book examines many of the major conceptual foundations in astrobiology, which cover a diversity of traditional fields including chemistry, biology, geosciences, physics, and astronomy.

The book explores many profound questions such as: How did life originate on Earth? How has life persisted on Earth for over three billion years? Is there life elsewhere in the Universe? What is the future of life on Earth? *Astrobiology* is centered on investigating the past and future of life on Earth by looking beyond Earth to get the answers. Astrobiology links the diverse scientific fields needed to understand life on our own planet and, potentially, life beyond. This new second edition:

- Expands on information about the nature of astrobiology and why it is useful
- Contains a new chapter “What is Life?” that explores the history of attempts to understand life
- Contains 20% more material on the astrobiology of Mars, icy moons, the structure of life, and the habitability of planets
- New ‘Discussion Boxes’ to stimulate debate and thought about key questions in astrobiology
- New review and reflection questions for each chapter to aid learning
- New boxes describing the careers of astrobiologists and how they got into the subject
- Offers revised and updated information throughout to reflect the latest advances in the field

Written for students of life sciences, physics, astronomy and related disciplines, the updated edition of *Astrobiology* is an essential introductory text that includes recent advances to this dynamic field.

Exploring the  
Solar System,  
2nd Edition

## Exploring the Solar System, 2nd Edition

Peter Bond

ISBN: 978-1-119-38490-8 • Jun 2020 • 500pp • Previous Edition: 978-1-4051-3499-6, 978-1-4443-5108-8

Previous Editions Licensed in French

### An Exciting and Authoritative Account of the Second Golden Age of Solar System Exploration

Award-winning author Peter Bond provides an up-to-date, in-depth account of the sun and its family in the 2nd edition of *Exploring the Solar System*. This new edition brings together the discoveries and advances in scientific understanding made during the last 60 years of solar and planetary exploration, using research conducted by the world's leading geoscientists, astronomers, and physicists. *Exploring the Solar System, 2nd Edition* is an ideal introduction for non-science undergraduates and anyone interested in learning about our small corner of the Milky Way galaxy.

## ATMOSPHERIC PHYSICS & CHEMISTRY

Atmospheric  
Multiphase  
Reaction  
Chemistry

## Atmospheric Multiphase Reaction Chemistry

### Fundamentals of Secondary Aerosol Formation

Hajime Akimoto & Jun Hirokawa

ISBN: 978-1-119-42242-6 • May 2020 • 600pp

### An important guide that highlights the multiphase chemical processes for students and professionals who want to learn more about aerosol chemistry

*Atmospheric Multiphase Reaction Chemistry* provides the information and knowledge of multiphase chemical processes and offers a review of the fundamentals on gas-liquid equilibrium, gas phase reactions, bulk aqueous phase reactions, and gas-particle interface reactions related to formation of secondary aerosols. The authors—noted experts on the topic—also describe new particle formation, and cloud condensation nuclei activity. In addition, the text includes descriptions of field observations on secondary aerosols and PM<sub>2.5</sub>.

Atmospheric aerosols play a critical role in air quality and climate change. There is growing evidence that the multiphase reactions involving heterogeneous reactions on the air-particle interface and the reactions in the bulk liquid phase of wet aerosol and cloud/fog droplets are important processes forming secondary aerosols in addition to gas-phase oxidation reactions to form low-volatile compounds. Comprehensive in scope, the book offers an understanding of the topic by providing a historical overview of secondary aerosols, the fundamentals of multiphase reactions, gas-phase reactions of volatile organic compounds, aqueous phase and air-particle interface reactions of organic compound. This important text:

- Provides knowledge on multiphase chemical processes for graduate students and research scientists
- Includes fundamentals on gas-liquid equilibrium, gas phase reactions, bulk aqueous phase reactions, and gas-particle interface reactions related to formation of secondary aerosols
- Covers in detail reaction chemistry of secondary organic aerosols

Written for students and research scientists in atmospheric chemistry and aerosol science of environmental engineering, *Atmospheric Multiphase Reaction Chemistry* offers an essential guide to the fundamentals of multiphase chemical processes.

### Atmospheric Science for Environmental Scientists, 2nd Edition

## Atmospheric Science for Environmental Scientists, 2nd Edition

C. Nick Hewitt & Andrea V. Jackson

ISBN: 978-1-119-51522-7 • Mar 2020 • 432pp

### Enlightens readers on the realities of global atmospheric change, including global warming and poor air quality

Climate change and air pollution are two of the most pressing issues facing Mankind. This book gives undergraduate and graduate students, researchers and professionals working in the science and policy of pollution, climate change and air quality a broad and up-to-date account of the processes that occur in the atmosphere, how these are changing as Man's relentless use of natural resources continues, and what effects these changes are having on the Earth's climate and the quality of the air we breathe.

Written by an international team of experts, *Atmospheric Science for Environmental Scientists, 2nd Edition* provides an excellent overview of our current understanding of the state of the Earth's atmosphere and how it is changing. The first half of the book covers: the climate of the Earth; chemical evolution of the atmosphere; atmospheric energy and the structure of the atmosphere; biogeochemical cycles; and tropospheric chemistry and air pollution. The second half looks at cloud formation and chemistry; particulate matter in the atmosphere; stratospheric chemistry and ozone depletion; boundary layer meteorology and atmospheric dispersion; urban air pollution; and global warming and climate change science.

- Provides succinct but detailed information on all the important aspects of atmospheric science for students
- Offers the most up-to-date treatment of key issues such as stratospheric chemistry, urban air pollution, and climate change
- Each chapter includes basic concepts, end-of-section questions, and more in-depth material
- Features contributions from the best experts and educators in the field of atmospheric science

*Atmospheric Science for Environmental Scientists, 2nd Edition* is an invaluable resource for students, teachers, and professionals involved in environmental science. It will also appeal to those interested in learning how the atmosphere works, how humankind is changing its composition, and what effects these changes are leading to.

### El Nino Southern Oscillation and Climate Change

## El Nino Southern Oscillation and Climate Change

Michael J. McPhaden, Agus Santoso & Wenju Cai

Series: Geophysical Monograph Series • ISBN: 978-1-119-54812-6 • Aug 2020 • TBA

### Comprehensive and up-to-date information on Earth's most dominant year-to-year climate variation

The El Niño Southern Oscillation (ENSO) in the Pacific Ocean has major worldwide social and economic consequences through its global scale effects on atmospheric and oceanic circulation, marine and terrestrial ecosystems, and other natural systems. Ongoing climate change is projected to significantly alter ENSO's dynamics and impacts.

*El Niño Southern Oscillation in a Changing Climate* presents the latest theories, models, and observations, and explores the challenges of forecasting ENSO as the climate continues to change.

Volume highlights include:

- Historical background on ENSO and its societal consequences
- Review of key El Niño (ENSO warm phase) and La Niña (ENSO cold phase) characteristics
- Mathematical description of the underlying physical processes that generate ENSO variations
- Conceptual framework for understanding ENSO changes on decadal and longer time scales, including the response to greenhouse gas forcing
- ENSO impacts on extreme ocean, weather, and climate events, including tropical cyclones, and how ENSO affects fisheries and the global carbon cycle
- Advances in modeling, paleo-reconstructions, and operational climate forecasting
- Future projections of ENSO and its impacts
- Factors influencing ENSO events, such as inter-basin climate interactions and volcanic eruptions

The American Geophysical Union promotes discovery in Earth and space science for the benefit of humanity. Its publications disseminate scientific knowledge and provide resources for researchers, students, and professionals.



## Bioinformatics, 4th Edition

ISBN: 978-1-119-33558-0

**Previous Edition:**  
978-0-471-47878-2

Mar 2020 • 648pp

# Bioinformatics, 4th Edition

Andreas D. Baxevanis, Gary Bader & David Wishart

Previous Editions Licensed in Greek, Japanese, Korean, and Polish



### Praise for the third edition of *Bioinformatics*

"This book is a gem to read and use in practice."

—*Briefings in Bioinformatics*

"This volume has a distinctive, special value as it offers an unrivalled level of details and unique expert insights from the leading computational biologists, including the very creators of popular bioinformatics tools."

—*ChemBioChem*

"A valuable survey of this fascinating field. . . I found it to be the most useful book on bioinformatics that I have seen and recommend it very highly."

—*American Society for Microbiology News*

"This should be on the bookshelf of every molecular biologist."

—*The Quarterly Review of Biology*

The field of bioinformatics is advancing at a remarkable rate. With the development of new analytical techniques that make use of the latest advances in machine learning and data science, today's biologists are gaining fantastic new insights into the natural world's most complex systems. These rapidly progressing innovations can, however, be difficult to keep pace with.

This new edition features:

- New chapters on metabolomics, population genetics, metagenomics and microbial community analysis, and translational bioinformatics
- A thorough treatment of statistical methods as applied to biological data
- Special topic boxes and appendices highlighting experimental strategies and advanced concepts
- Annotated reference lists, comprehensive lists of relevant web resources, and an extensive glossary of commonly used terms in bioinformatics, genomics, and proteomics

*Bioinformatics* is an indispensable companion for researchers, instructors, and students of all levels in molecular biology and computational biology, as well as investigators involved in genomics, clinical research, proteomics, and related fields.

### About the Authors

**Dr. Andreas D. Baxevanis** is the Associate Director for Computational Bioscience for the National Institutes of Health's Intramural Research Program and a Senior Scientist within the Division of Intramural Research at the National Human Genome Research Institute and Director of NHGRIs Bioinformatics and Scientific Programming Core. He is Editor-in-Chief of Current Protocols in Bioinformatics and has served as Executive Editor for the Database Issue of Nucleic Acids Research, Associate Editor of Proteins: Structure, Function, and Bioinformatics, and Senior Editor of Molecular Cancer Therapeutics. He teaches bioinformatics at The Johns Hopkins University and serves as an adjunct faculty member at Boston University.

**Dr. David Wishart** (PhD Yale, 1991) is a Professor in the Departments of Biological Sciences and Computing Science at the University of Alberta and the co-director of the Nanobiology program at the NRC's National Institute for Nanotechnology (NINT).

### Encyclopedia of Marine Biotechnology

## Encyclopedia of Marine Biotechnology

Se-Kwon Kim

ISBN: 978-1-119-14377-2 • Jul 2020 • 3248pp

Featuring contributions from 100 international experts in the field, this five-volume encyclopedia provides comprehensive coverage of topics in marine biotechnology. It starts with the history of the field and delivers a complete overview of marine biotechnology. It then offers information on marine organisms, bioprocess techniques, marine natural products, biomaterials, bioenergy, and algal biotechnology. The encyclopedia also covers marine food and biotechnology applications in areas such as pharmaceuticals, cosmeceuticals, and nutraceuticals.

Each topic in *Encyclopedia of Marine Biotechnology* is followed by 10-30 subtopics. The reference looks at algae cosmetics, drugs, and fertilizers; biodiversity; chitins and chitosans; aeropylsin-1, toluquinol, astaxanthin, and fucoxanthin; and algal and fish genomics. It examines neuro-protective compounds from marine microorganisms; potential uses and medical management of neurotoxic phycotoxins; and the role of metagenomics in exploring marine microbiomes. Other sections fully explore marine microbiology, pharmaceutical development, seafood science, and the new biotechnology tools that are being used in the field today.

## CELL &amp; MOLECULAR BIOLOGY

### Human Drug Metabolism, 3rd Edition

## Human Drug Metabolism, 3rd Edition

Michael D. Coleman

ISBN: 978-1-119-45856-2 • Mar 2020 • 680pp • Previous Edition: 978-0-470-74217-4

### Provides a timely update to a key textbook on human drug metabolism

The third edition of this comprehensive book covers basic concepts of teaching drug metabolism, starting from extreme clinical consequences to systems and mechanisms and toxicity. It provides an invaluable introduction to the core areas of pharmacology and examines recent progress and advances in this fast moving field and its clinical impact.

*Human Drug Metabolism, 3rd Edition* begins by covering basic concepts such as clearance and bioavailability, and looks at the evolution of biotransformation, and how drugs fit into this carefully managed biological environment. More information on how cytochrome P450s function and how they are modulated at the sub-cellular level is offered in this new edition. The book also introduces helpful concepts for those struggling with the relationship of pharmacology to physiology, as well as the inhibition of biotransformational activity. Recent advances in knowledge of a number of other metabolizing systems are covered, including glucuronidation and sulphation, along with the main drug transporters. Also, themes from the last edition are developed in an attempt to chart the progress of personalized medicine from concepts towards practical inclusion in routine therapeutics. The last chapter focuses on our understanding of how and why drugs injure us, both in predictable and unpredictable ways. Appendix A highlights some practical approaches employed in both drug metabolism research and drug discovery, whilst Appendix B outlines the metabolism of some drugs of abuse. Appendix C advises on formal examination preparation and Appendix D lists some substrates, inducers and inhibitors of the major human cytochrome P450s.

- Fully updated to reflect advances in the scientific field of drug metabolism and its clinical impact
- Reflects refinements in the author's teaching method, particularly with respect to helping students understand biological systems and how they operate
- Illustrates the growing relationship between drug metabolism and personalized medicine
- Includes recent developments in drug discovery, genomics, and stem cell technologies

*Human Drug Metabolism, 3rd Edition* is an excellent book for advanced undergraduate and graduate students in molecular biology, biochemistry, pharmacology, pharmacy, and toxicology. It will also appeal to professionals interested in an introduction to this field, or who want to learn more about these bench-to-bedside topics to apply it to their practice.

### Translational Nanomedicine

## Translational Nanomedicine

Robert A. Meyers

Series: Current Topics from the Encyclopedia of Molecular Cell Biology and Molecular Medicine •

ISBN: 978-3-527-33789-7 • Mar 2020 • 484pp

The largest high-level encyclopedia on molecular medicine is now publishing a topical volume on Nanomedicine. The long awaited volume gives a comprehensive overview on nanomaterials in drug delivery, imaging and as therapeutics.

**Color Atlas  
of Medical  
Bacteriology,  
3rd Edition**

**Color Atlas of Medical Bacteriology, 3rd Edition**

Luis M. de la Maza, Marie T. Pezzlo, Cassiana E. Bittencourt & Ellena M. Peterson

**Series:** ASM Books • **ISBN:** 978-1-68367-035-3 • Jul 2020 • 366pp

**A unique visual reference for the diagnostic microbiology laboratory**

Conceived by a team of authors with decades of classroom and laboratory experience, the *Color Atlas of Medical Bacteriology* includes more than 730 brilliant, four-color images of common pathogenic bacteria and descriptions of the methods used to identify them, including microscopic and phenotypic characteristics, colonial morphology, and biochemical properties.

Each chapter, organized by pathogen and taxonomic group, begins with a brief introduction that provides a contextual framework for the images. This second edition embraces the latest developments in molecular biology methodology in the diagnostic laboratory with a new chapter examining the breadth and possibilities of these new techniques. Also, in light of the alarming emergence of antibiotic resistance, antimicrobial susceptibility testing is addressed in another new chapter. The final chapter on stains, media, and reagents details the most common methods and biochemical reactions used in the identification of pathogenic bacteria. The book's hundreds of illustrations, of typical stains, colony morphologies, and biochemical reactions of bacteria most frequently encountered in the clinical laboratory, have been thoroughly updated.

A valuable illustrative supplement for lectures and laboratory presentations, this easy-to-use atlas was written for laboratorians, clinicians, students, and anyone interested in the field of diagnostic medical bacteriology.

**Coal Geology,  
3rd Edition**

**Coal Geology, 3rd Edition**

Larry Thomas

**ISBN:** 978-1-119-42413-0 • Aug 2020 • 480pp • **Previous Edition:** 978-1-119-99044-4

**A global exploration of coal geology, from production and use to chemical properties and coal petrology**

*Coal Geology, 3rd Edition*, offers a revised and updated edition of this popular book which provides a comprehensive overview of the field of coal geology including coal geophysics, hydrogeology and mining. Also covered in this volume are fully revised coverage of resource and reserve definitions, equipment and recording techniques together with the use of coal as an alternative energy source as well as environmental implications.

This third edition provides a textbook ideally suited to anyone studying, researching or working in the field of coal geology, geotechnical engineering and environmental science.

- Fills the gap between academic aspects of coal geology and the practical role of geology in the coal industry
- Examines sedimentological and stratigraphical geology, together with mining, geophysics, hydrogeology, environmental issues and coal marketing
- Defines global coal resource classifications and methods of calculation
- Addresses the alternative uses of coal as a source of energy
- Covers a global approach to coal producers and consumers

### Pesticides in Crop Production

#### Pesticides in Crop Production

##### Physiological and Biochemical Action

Prabhat Kumar Srivastava, Vijay Pratap Singh, Anita Singh, Durgesh K. Tripathi, Samiksha Singh & Sheo Mohan Prasad

ISBN: 978-1-119-43219-7 • Apr 2020 • 312pp

#### A guide to the diversity of pesticides used in modern agricultural practices, and the relevant social and environmental issues

*Pesticides in Crop Production* offers an important resource that explores pesticide action in plants; pesticide metabolism in soil microbes, plants and animals; bioaccumulation of pesticides and sensitiveness of microbiome towards pesticides. The authors explore pesticide risk assessment, the development of pesticide resistance in pests, microbial remediation of pesticide intoxicated legumes and pesticide toxicity amelioration in plants by plant hormones.

The authors include information on eco-friendly pest management. They review the impact of pesticides on soil microorganism, crops and other plants along with the impact on other organisms like aquatic fauna and terrestrial animals including human beings. The book also contains an analysis of pesticide by GC-MS/MS (Gas Chromatography tandem Mass Spectrometry) a reliable method for the quantification and confirmation of multiclass pesticide residues. This important book:

- Offers a comprehensive guide to the use of the diversity of pesticides and the pertinent social and environmental issues
- Explores the impact of pesticides from morphological, anatomical, physiological and biochemical perspectives
- Shows how pesticides affects soil microorganisms, crops and other plants along with the impact on other organisms like aquatic fauna and animals
- Critically examines whether chemical pesticides are boon or bane and whether they can be replaced by environmental friendly pesticides

Written for students, researchers and professionals in agriculture, botany, entomology and biotechnology, *Pesticides in Crop Production* examines the effects of chemical pesticides and the feasibility of using bio-pesticides.

### Heat Stress Tolerance in Plants

#### Heat Stress Tolerance in Plants

##### Physiological, Molecular and Genetic Perspectives

Shabir H Wani & Vinay Kumar

ISBN: 978-1-119-43236-4 • Apr 2020 • 320pp

#### Demystifies the genetic, biochemical, physiological, and molecular mechanisms underlying heat stress tolerance in plants

Heat stress—when high temperatures cause irreversible damage to plant function or development—severely impairs the growth and yield of agriculturally important crops. As the global population mounts and temperatures continue to rise, it is crucial to understand the biochemical, physiological, and molecular mechanisms of thermotolerance to develop ‘climate-smart’ crops. *Heat Stress Tolerance in Plants* provides a holistic, cross-disciplinary survey of the latest science in this important field.

Presenting contributions from an international team of plant scientists and researchers, this text examines heat stress, its impact on crop plants, and various mechanisms to modulate tolerance levels. Topics include recent advances in molecular genetic approaches to increasing heat tolerance, the potential role of biochemical and molecular markers in screening germplasm for thermotolerance, and the use of next-generation sequencing to unravel the novel genes associated with defense and metabolite pathways. This insightful book:

- Places contemporary research on heat stress in plants within the context of global climate change and population growth
- Includes diverse analyses from physiological, biochemical, molecular, and genetic perspectives
- Explores various approaches to increasing heat tolerance in crops of high commercial value, such as cotton
- Discusses the applications of plant genomics in the development of thermotolerant “designer crops”

An important contribution to the field, *Heat Stress Tolerance in Plants* is an invaluable resource for scientists, academics, students, and researchers working in fields of pulse crop biochemistry, physiology, genetics, breeding, and biotechnology.

## Vitamins and Minerals Bio-fortification of Edible Plants

### Vitamins and Minerals Bio-fortification of Edible Plants

Noureddine Benkeblia

Series: New York Academy of Sciences • ISBN: 978-1-119-51111-3 • Jun 2020 • 280pp

#### A Detailed Reference on How Modern Biotechnology is using the Biofortification of Crops to Improve the Vitamin and Mineral Content of Edible Plants

In this reference, *Vitamins and Minerals Bio-Fortification of Edible Plants*, authors cover new territory on phytonutrients, focusing on the enhancement and modification of edible crops. This book presents techniques and research findings from modern biotechnology to educate readers on the newest tools and research in the field. Readers will learn how groundbreaking scientific advances have contributed to the nutritional content of edible plants and crops for animals and humans.

Inside, readers will find comprehensive information on new concepts of biofortification, including but not limited to:

While many books cover the phytonutrients of crops, this reference book reports on methodologies, techniques, and environmental changes used to enhance and improve agricultural products. It is one of the first to provide information on using modern biotechnologies to modify crops with the goal of creating health benefits.

## ECOLOGY & ORGANISMAL BIOLOGY

## Sustainability

### Sustainability

#### Fundamentals and Applications

Rao Y. Surampalli, Tian C. Zhang, Manish Kumar Goyal, Satinder K. Brar & R. D. Tyagi

ISBN: 978-1-119-43396-5 • Jun 2020 • 600pp

#### A comprehensive resource to sustainability and its application to the environmental, industrial, agricultural and food security sectors

*Sustainability* fills a gap in the literature in order to provide an important guide to the fundamental knowledge and practical applications of sustainability in a wide variety of areas. The authors – noted experts who represent a number of sustainability fields – bring together in one comprehensive volume the broad range of topics including basic concepts, impact assessment, environmental and the socio-economic aspects of sustainability. In addition, the book covers applications of sustainability in environmental, industrial, agricultural and food security, as well as carbon cycle and infrastructural aspects.

*Sustainability* addresses the challenges the global community is facing due to population growth, depletion of non-renewable resources of energy, environmental degradation, poverty, excessive generation of wastes and more. Throughout the book the authors discuss the economics, ecological, social, technological and systems perspectives of sustainability. This important resource:

- Explores the fundamentals as well as the key concepts of sustainability;
- Covers basic concepts, impact assessment, environmental and socio-economic aspects, applications of sustainability in environmental, industrial, agricultural and food security, carbon cycle and infrastructural aspects;
- Argues the essentiality of sustainability in ensuring the propitious future of earth systems; and
- Authored by experts from a range of various fields related to sustainability.

Written for researchers and scientists, students and academics, *Sustainability: Fundamentals and Applications* is a comprehensive book that covers the basic knowledge of the topic combined with practical applications.

## ECONOMIC & APPLIED GEOLOGY

## Applied Concepts in Fractured Reservoirs

### Applied Concepts in Fractured Reservoirs

John C. Lorenz & Scott P. Cooper

ISBN: 978-1-119-05586-0 • Apr 2020 • 232pp

#### A much-needed, precise and practical treatment of a key topic in the energy industry and beyond, *Applied Concepts in Fractured Reservoirs* is an invaluable reference for those in both industry and academia

Authored by renowned experts in the field, this book covers the understanding, evaluation, and effects of fractures in reservoirs. It offers a comprehensive yet practical discussion and description of natural fractures, their origins, characteristics, and effects on hydrocarbon reservoirs. It starts by introducing the reader to basic definitions and classifications of fractures and fractured reservoirs. It then provides an outline for fractured-reservoir characterization and analysis, and goes on to introduce the way fractures impact operational activities.

Well organized and clearly illustrated throughout, *Applied Concepts in Fractured Reservoirs* starts with a section on understanding natural fractures. It looks at the different types, their dimensions, and the mechanics of fracturing rock in extension and shear. The next section provides information on measuring and analyzing fractures in reservoirs. It covers: logging core for fractures; taking, measuring, and analyzing fracture data; new core vs. archived core; CT scans; comparing fracture data from outcrops, core, and logs; and more. The last part examines the effects of natural fractures on reservoirs, including: the permeability behavior of individual fractures and fracture systems; fracture volumetrics; effects of fractures on drilling and coring; and the interaction between natural and hydraulic fractures.

- Teaches readers to understand and evaluate fractures
- Compiles and synthesizes various concepts and descriptions scattered in literature and synthesizes them with unpublished oil-field observations and data, along with the authors' own experience
- Bridges some of the gaps between reservoir engineers and geologists
- Provides an invaluable reference for geologists and engineers who need to understand naturally fractured reservoirs in order to efficiently extract hydrocarbons
- Illustrated in full color throughout
- Companion volume to the *Atlas of Natural and Induced Fractures in Core*



### Disaster Education, Communication and Engagement

## Disaster Education, Communication and Engagement

Neil Dufty

ISBN: 978-1-119-56979-4 • Jun 2020 • 232pp

### A detailed guide to the design and evaluation of effective disaster learning programs

*Disaster Education, Communication and Engagement* provides a much-needed evidence-based guide for designing effective disaster learning plans and programs that are tailored to local communities and their particular hazard risks. Drawing on the most recent research from disaster psychology, disaster sociology, and education psychology, as well as evaluations of disaster learning programs, the book contains practical guidance for putting in place a proven design framework.

The book outlines the steps to take in order to tailor a disaster education, communication and engagement program and highlights illustrative examples of effective programs and activities from around the world. The author includes information on how to identify potential community learners and presents a methodology for understanding the at-risk community, its hazard risks, disaster risk reduction, and emergency management arrangements. *Disaster Education, Communication and Engagement* describes both country-wide campaigns and local disaster programs that involve community participation. This important resource:

- Presents a detailed framework to guide the design and evaluation of tailored disaster learning programs
- Includes information that links disaster resilience with sustainability and climate change learning
- Describes the 'disaster cycle' and reviews learning content and methods related to the cycle
- Explains effective ways to combine disaster education, disaster communications, and disaster-related engagement
- Contains material on using new technologies such as gamification, virtual reality, and social media

Written for emergency managers, students of emergency management, and humanitarian courses, *Disaster Education, Communication and Engagement* is a hands-on guide filled with ideas and templates for designing and evaluating targeted disaster learning programs.

### Green Synthesis of Nanomaterials for Bioenergy Applications

## Green Synthesis of Nanomaterials for Bioenergy Applications

Neha Srivastava, Manish Srivastava, P. K. Mishra & Vijai Kumar Gupta

ISBN: 978-1-119-57681-5 • Aug 2020 • 304pp

### An authoritative summary of the quest for an environmentally sustainable synthesis process of nanomaterials and their application for environmental sustainability

*Green Synthesis of Nanomaterials for Bioenergy Applications* is an important guide that provides information on the fabrication of nanomaterial and the application of low cost, green methods. The book also explores the impact on various existing bioenergy approaches. Throughout the book, the contributors—noted experts on the topic—offer a reliable summary of the quest for an environmentally sustainable synthesis process of nanomaterials and their application to the field of environmental sustainability.

The green synthesis of nanoparticles process has been widely accepted as a promising technique that can be applied to a variety of fields. The green nanotechnology-based production processes to fabricate nanomaterials operates under green conditions without the intervention of toxic chemicals. The book's exploration of more reliable and sustainable processes for the synthesis of nanomaterials, can lead to the commercial application of the economically viability of low-cost biofuels production. This important book:

- Summarizes the quest for an environmentally sustainable synthesis process of nanomaterials for their application to the field of environmental sustainability
- Offers an alternate, sustainable green energy approach that can be commercially implemented worldwide
- Covers recent approaches such as fabrication of nanomaterial that apply low cost, green methods and examines its impact on various existing bioenergy applications

Written for researchers, academics and students of nanotechnology, nanosciences, bioenergy, material science, environmental sciences, and pollution control, *Green Synthesis of Nanomaterials for Bioenergy Applications* is a must-have guide that covers green synthesis and characterization of nanomaterials for cost effective bioenergy applications.

### Aquaculture Parasitology

## Aquaculture Parasitology Global Impacts and Management in Finfish

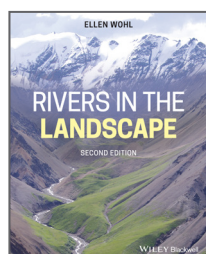
Sarah Poynton & Barbara Nowak

ISBN: 978-1-119-56364-8 • Apr 2020 • 408pp

Aquatic parasites can result in catastrophic losses of fish populations and production output in aquaculture facilities. Recognizing, rapid response to, and prevention of parasite outbreaks is essential to maintaining viable aquaculture production levels. *Aquaculture Parasitology: Global Impacts and Management* provides essential and practical information on protozoan and metazoan parasites that have significant economic impacts on finfish production.

*Aquaculture Parasitology: Global Impacts and Management* opens with an in-depth look at the parasites that pose the most significant threat to economically important fish species. Building on that foundation, the second section of the book looks more closely at region-specific impact and management to parasite outbreaks. The book closes with a look at risk assessment and analysis that will be of particular use to the aquaculture industry. Providing a truly global synthesis of the impact of aquatic parasites on aquaculture production, *Aquaculture Parasitology: Global Impacts and Management* will be an essential resource for anyone working in the fields of fish health and aquaculture production.

## FLUVIAL HYDROLOGY & LIMNOLOGY



## Rivers in the Landscape, 2nd Edition

Ellen Wohl

ISBN: 978-1-119-53541-6 • Mar 2020 • 512pp

Rivers are the great shapers of terrestrial landscapes. Very few points on Earth above sea level do not lie within a drainage basin. Even points distant from the nearest channel are likely to be influenced by that channel. Tectonic uplift raises rock thousands of meters above sea level. Precipitation falling on the uplifted terrain concentrates into channels that carry sediment downward to the oceans and influence the steepness of adjacent hill slopes by governing the rate at which the landscape incises. Rivers migrate laterally across lowlands, creating a complex topography of terraces, floodplain wetlands and channels. Subtle differences in elevation, grain size, and soil moisture across this topography control the movement of ground water and the distribution of plants and animals.

*Rivers in the Landscape, Second Edition*, emphasizes general principles and conceptual models, as well as concrete examples of each topic drawn from the extensive literature on river process and form. The book is suitable for use as a course text or a general reference on rivers. Aimed at advanced undergraduate students, graduate students, and professionals looking for a concise summary of physical aspects of rivers, *Rivers in the Landscape* is designed to:

- emphasize the connectivity between rivers and the greater landscape by explicitly considering the interactions between rivers and tectonics, climate, biota, and human activities;
- provide a concise summary of the current state of knowledge for physical process and form in rivers;
- reflect the diversity of river environments, from mountainous, headwater channels to large, lowland, floodplain rivers and from the arctic to the tropics;
- reflect the diverse methods that scientists use to characterize and understand river process and form, including remote sensing, field measurements, physical experiments, and numerical simulations;
- reflect the increasing emphasis on quantification in fluvial geomorphology and the study of Earth surfaces in general;
- provide both an introduction to the classic, foundational papers on each topic, and a guide to the latest, particularly insightful and integrative references.

## Food Wastes and By-products

**Food Wastes and By-products****Nutraceutical and Health Potential**

Rocio Campos-Vega, B. Dave Oomah &amp; Hayde Azeneth Vergara-Castaneda

ISBN: 978-1-119-53410-5 • Mar 2020 • 480pp

**A complete guide to the evolving methods by which we may recover by-products and significantly reduce food waste**

Across the globe, one third of cereals and almost half of all fruits and vegetables go to waste. The cost of such waste – both to economies and to the environment – is a serious and increasing concern within the food industry. If we are to overcome this crisis and move towards a sustainable future, we must do everything possible to utilize innovative new methods of extracting and processing valuable by-products of all kinds.

*Food Wastes and By-products* represents a complete primer to this important and complex process. Edited and written by leading researchers, the text provides essential information on the supply of waste and its composition, identifies foods rich in valuable bioactive compounds, and explores revolutionary methods for creating by-products from fruit, vegetable, and seed waste. Other chapters discuss the nutraceutical properties of value-added by-products and their uses in the manufacturing of dietary fibers, food flavors, supplements, pectin, and more. This book:

- Explains how reconstituted by-products can best be used to radically reduce food waste
- Discusses the potential nutraceutical assets of recovered food waste
- Covers a broad range of by-product sources, such as mangos, cacao, flaxseed, and spent coffee grounds
- Describes novel extraction processes and the emerging use of nanotechnology

A significant contribution to the field, *Food Wastes and By-products* is a timely and essential resource for food industry professionals, government agencies and NGOs involved in nutrition, agriculture, and food production, and university instructors and students in related areas.

## The Chemistry of Food, 2nd Edition

**The Chemistry of Food, 2nd Edition**

Jan Velisek, Richard Koplik &amp; Karel Cejpek

ISBN: 978-1-119-53764-9 • May 2020 • 1000pp

**Wiley's landmark food chemistry textbook that provides an all-in-one reference book, revised and updated**

The revised second edition of *The Chemistry of Food* provides a comprehensive overview of important compounds constituting of food and raw materials for food production. The authors highlight food's structural features, chemical reactions, organoleptic properties, nutritional, and toxicological importance. The updated second edition reflects the thousands of new scientific papers concerning food chemistry and related disciplines that have been published since 2012. Recent discoveries deal with existing as well as new food constituents, their origin, reactivity, degradation, reactions with other compounds, organoleptic, biological, and other important properties. The second edition extends and supplements the current knowledge and presents new facts about chemistry, legislation, nutrition, and food safety. The main chapters of the book explore the chemical structure of substances and subchapters examine the properties or uses. This important resource:

- Offers in a single volume an updated text dealing with food chemistry
- Contains complete and fully up-to-date information on food chemistry, from structural features to applications
- Features several visual aids including reaction schemes, diagrams and tables, and nearly 2,000 chemical structures
- Written by internationally recognized authors on food chemistry

Written for upper-level students, lecturers, researchers and the food industry, the revised second edition of *The Chemistry of Food* is a quick reference for almost anything food-related as pertains to its chemical properties and applications.

## Water Activity in Foods

**Water Activity in Foods****Fundamentals and Applications**

Gustavo V. Barbosa-Canovas

Series: Institute of Food Technologists Series • ISBN: 978-1-118-76831-0 • Mar 2020 • 648pp •

Previous Edition: 978-0-8138-2408-6

This second edition of *Water Activity in Foods* furnishes those working within food manufacturing, quality control, and safety with a newly revised guide to water activity and its role in the preservation and processing of food items. With clear, instructional prose and illustrations, the book's international team of contributors break down the essential principles of water activity and water-food interactions, delineating water's crucial impact upon attributes such as flavor, appearance, texture, and shelf life.

The updated and expanded second edition continues to offer an authoritative overview of the subject, while also broadening its scope to include six newly written chapters covering the latest developments in water activity research. Exploring topics ranging from deliquescence to crispness, these insightful new inclusions complement existing content that has been refreshed and reconfigured to support the food industry of today.

### Herbs, Spices and Medicinal Plants

#### Herbs, Spices and Medicinal Plants

##### Processing, Health Benefits and Safety

Mohammad B. Hossain, Nigel P. Brunton & Dilip K. Rai

**Series:** IFST Advances in Food Science • **ISBN:** 978-1-119-03661-6 • Jun 2020 • 500pp

Recent epidemiological and clinical studies suggest that herbs and spices, which are well-known sources of bioactive phytochemicals, also have specific health benefits, including anti-diabetic properties, the ability to stimulate digestion, and as anti-oxidants and anti-inflammatories. However, herbs and spices are perishable items: to preserve them for export and/or storage, they are often processed prior to consumption, which could affect their physico-chemical and biological properties. This book will provide a comprehensive overview of the health benefits, analytical techniques used and effects of processing upon the physico-chemical properties of herbs and spices. The book will open with a section on the technological and health benefits of herbs and spices. The second part will review the effect of classical and novel processing techniques on the properties of herbs/spices. The third section will examine extraction techniques and analytical methodologies used for herbs and spices. Contributors from both academia and industry will provide informed perspectives.

## GENERAL &amp; INTRODUCTORY AGRICULTURE

### Forages, Volume 2, 7th Edition

#### Forages, Volume 2, 7th Edition

##### The Science of Grassland Agriculture

Kenneth J. Moore, Daren D Redfearn, Michael Collins & C. Jerry Nelson

**ISBN:** 978-1-119-43657-7 • May 2020 • 952pp • **Previous Edition:** 978-0-8138-0232-9

*Forages: The Science of Grassland Agriculture, 7th Edition, Volume II* will extensively evaluate the current knowledge and information on forage agriculture. Chapters written by leading researchers and authorities in grassland agriculture are aggregated under section themes, each one representing a major topic within grassland science and agriculture. This 7th edition will include two new additional chapters covering all aspects of forage physiology in three separate chapters, instead of one in previous editions. Chapters will be updated throughout to include new information that has developed since the last edition. This new edition of the classic reference serves as a comprehensive supplement to *An Introduction to Grassland Agriculture, Volume I*.

## GENERAL &amp; INTRODUCTORY FOOD SCIENCE &amp; TECHNOLOGY

### Textural Characteristics of World Foods

#### Textural Characteristics of World Foods

Katsuyoshi Nishinari

**ISBN:** 978-1-119-43069-8 • Mar 2020 • 424pp

##### A complete guide to the textural characteristics of an international array of traditional and special foods

It is widely recognized that texture has an intrinsic relationship to food preference. A full understanding of its functions and qualities is, therefore, of crucial importance to food technologists and product developers, as well as those working towards the treatment of dysphagia.

*Textural Characteristics of World Foods* is the first book to apply a detailed set of criteria and characteristics to the textures of traditional and popular foods from across the globe. Structuring chapters by region, its authors chart a journey through the textural landscapes of each continent's cuisines, exploring the complex and symbiotic relationships that exist between texture, aroma, and taste. This innovative text:

- Provides an overview of the textural characteristics of a wide range of foods
- Includes descriptions of textures and key points of flavor release
- Examines the relationships between the texture, taste, and aroma of each food presented
- Is structured by geographic region

Rich with essential insights and important research, *Textural Characteristics of World Foods* offers all those working in food science and development a better picture of texture and the multifaceted role it can play.

Carbon in  
Earth's Interior**Carbon in Earth's Interior**

Craig Manning, Jung-Fu Lin &amp; Wendy Mao

**Series:** Geophysical Monograph Series • **ISBN:** 978-1-119-50826-7 • Mar 2020 • 384pp**Explores the behavior of carbon in minerals, melts, and fluids under extreme conditions**

Carbon trapped in diamonds and carbonate-bearing rocks in subduction zones are examples of the continuing exchange of substantial carbon between Earth's surface and its interior. However, there is still much to learn about the forms, transformations, and movements of carbon deep inside the Earth.

*Carbon in Earth's Interior* presents recent research on the physical and chemical behavior of carbon-bearing materials and serves as a reference point for future carbon science research.

Volume highlights include:

- Data from mineral physics, petrology, geochemistry, geophysics, and geodynamics
- Research on the deep carbon cycle and carbon in magmas or fluids
- Dynamics, structure, stability, and reactivity of carbon-based natural materials
- Properties of allied substances that carry carbon
- Rates of chemical and physical transformations of carbon

The American Geophysical Union promotes discovery in Earth and space science for the benefit of humanity. Its publications disseminate scientific knowledge and provide resources for researchers, students, and professionals.

Geochemistry,  
2nd Edition**Geochemistry, 2nd Edition**

William M. White

**ISBN:** 978-1-119-43805-2 • Jul 2020 • 750pp**A Comprehensive Introduction to the "Geochemist Toolbox" – the Basic Principles of Modern Geochemistry**

In the new edition of William M. White's *Geochemistry*, undergraduate and graduate students will find each of the core principles of geochemistry covered. From defining key principles and methods to examining Earth's core composition and exploring organic chemistry and fossil fuels, this definitive edition encompasses all the information needed for a solid foundation in the earth sciences for beginners and beyond.

For researchers and applied scientists, this book will act as a useful reference on fundamental theories of geochemistry, applications, and environmental sciences. The new edition includes new chapters on the geochemistry of the Earth's surface (the "critical zone"), marine geochemistry, and applied geochemistry as it relates to environmental applications and geochemical exploration.

In this foundational look at geochemistry, new learners and professionals will find the answer to the essential principles and techniques of the science behind the Earth and its environs.

Applied  
Multidimensional  
Geological  
Modeling**Applied Multidimensional Geological Modeling**

A Keith Turner, Michiel Van der Meulen &amp; Holger Kessler

**ISBN:** 978-1-119-16312-1 • Jun 2020 • 450pp

Over the past decades, geological survey organizations have digitized their data handling and holdings, unlocking vast amounts of data and information for computer processing. They have undertaken 3-D modeling alongside, and in some cases instead of, conventional geological mapping and begun delivering both data and interpretations to increasingly diverse stakeholder communities. *Applied Multidimensional Geological Modeling* provides a citable central source that documents the current capabilities and contributions of leading geological survey organization and other practitioners in industry and academia that are producing multidimensional geological models.

This book focuses on applications related to human interactions with conditions in the shallow subsurface, within 100-200 m of the surface. The 26 chapters, developed by 100 contributors associated with 37 organizations, discuss topics relevant to any geologist, scientist, engineer, urban planner, or decision maker whose practice includes assessment or planning of underground space.

## Biogeochemical Cycles

### Biogeochemical Cycles Ecological Drivers and Environmental Impact

Katerina Dontsova, Zsuzsanna Balogh-Brunstad & Gal Le Roux

**Series:** Geophysical Monograph Series • **ISBN:** 978-1-119-41330-1 • Mar 2020 • TBApp

*Biogeochemical Cycles: Ecological Drivers and Environmental Impact* is a collection of the latest information on the techniques and methods currently used in this field, focusing on biological and/or ecological effects of biogeochemical elemental cycles including carbon, nitrogen, major and trace elements, chemical weathering on multiple scales of nanometers to watersheds, and advances in technology of studying these processes. Volume highlights include:

- Remote sensing and modeling techniques used to quantify changes in the ecosystem/s productivity, and microscopic techniques to estimate the extent of weathering
- Novel isotopic techniques to assess changes in trace elemental cycles as influenced by the changing climate, and plant-mediated effect of climate change on major elemental cycles
- Impact of climate change and other anthropogenic influences in agricultural and extreme (frontier) environments

*Biogeochemical Cycles: Ecological Drivers and Environmental Impact* is a valuable resource for students, researchers and professionals in the field of biogeosciences, hydrology, ecology, earth and planetary surface processes, volcanology, petrology, geochemistry, mineralogy, soil science, agricultural science, climate change and environmental science.

## Caves, 2nd Edition

### Caves, 2nd Edition Processes, Development, and Management

David Gillieson

**ISBN:** 978-1-119-45557-8 • Jul 2020 • 400pp

This textbook describes caves as physical, geological, and biological phenomena: it provides explanations of how they form, what can be learnt from them, and how they can best be managed for the benefit of future generations. The limestone caves of the world have long been of importance to people for shelter, water supply, food, spirituality and for defense. They have long provoked awe and a sense of mystery. Cave science is now well established to elucidate their mystery. New to this edition:

- 4 new chapters (speleogenesis; cave archaeology; human uses of caves; documentation of caves)
- New end-of-chapter case study boxes in most chapters
- All chapters fully revised and updated to reflect changes in cave management and technology in the last two decades

## Extreme Events and Climate Change

### Extreme Events and Climate Change A Multidisciplinary Approach

Federico Castillo, Michael Wehner & Daithi Stone

**Series:** Geophysical Monograph Series • **ISBN:** 978-1-119-41362-2 • Aug 2020 • 350pp

Significant anthropogenic climate change has already occurred and even under the most optimistic scenarios future climate change would be significantly more severe than the present. Cross disciplinary studies between the physical climate sciences and the impacts, community has recently become much more active and *Extreme Events and Climate Change* will recognize this trend in research.

Volume highlights include:

- Access to methods and analysis that are helpful in relating changes in extreme events to their societal impacts
- Significant advances in understanding in how extreme weather changes as the climate warms. This is due to both theoretical and modeling advances in the physical aspects of climate science
- A comprehensive overview of methods and state of the science for decision makers and interested students and researchers
- Innovative ways of using data from different sources that result in a cohesive analysis of the impact of extreme events to society

*Extreme Events and Climate Change: A Multidisciplinary Approach* will be a valuable resource for students and researchers in the fields of hazard and risk analysis in general, as well as to those with a special interest in climate change, atmospheric and ocean sciences, seismology, hydrology, geography, agricultural science, geohealth, environmental and space science.



## Unconventional Hydrocarbon Resources

### Unconventional Hydrocarbon Resources Techniques for Reservoir Engineering Analysis

RezaBarati Ghahfarokhi & Mustafa M. H. Alhubail

**Series:** AGU Advanced Textbooks • **ISBN:** 978-1-119-42032-3 • May 2020 • 460pp

Unconventional shale oil and shale gas plays have gained more attention since they are the sole cause of improvements in making the oil and gas business in US and some other companies getting closer to become independent.

There is not one comprehensive book with a set of examples and projects that show the step by step approach of calculating the resource volume and optimizing the hydraulic fracturing of unconventional resources. Thus, the primary author has just developed a course in the area of Unconventional Resources from scratch using a unique content that comes from his 10-years of experience in this area. Primary author, Reza and three of his graduate students, developed a unique set of examples, homework assignments, and projects for this course using valuable datasets from the Bakken, Woodford, Mississippian play, and Eagle Ford. He realized that this discipline suffers from a lack of a comprehensive textbook in this area that contains relevant examples, assignments, and projects for students to work on. Thus, as discussed above, unconventional resources have become a game changer in oil and gas industry since early 2000s. *Engineering of Shale Resources* will be a valuable resource to students, both graduate and undergraduate, and instructors as well as junior staff of oil and gas operators and service companies both nationally and internationally.

## GEOMORPHOLOGY

### Beaches and Coasts, 2nd Edition

### Beaches and Coasts, 2nd Edition

Richard A. Davis Jr. & Duncan M. Fitzgerald

**ISBN:** 978-1-119-33448-4 • Mar 2020 • 536pp • **Previous Edition:** 978-0-632-04308-8

**A new edition of a unique textbook that provides an exhaustive treatment of the world's different coasts—with focus on climate change sea-level rise**

Coastlines of the world are as diverse and complex as any geological setting on Earth, and understanding them is extremely important. *Beaches and Coasts, Second Edition* is an exciting and unique textbook that covers the world's different coasts and details the highly varied processes that have shaped them. This new edition emphasizes the future susceptibility of coast to climate driven stresses and decreasing sediment supplies, and considers various aspects of coastal management that are and/or that need to be undertaken.

Seeking to better educate students and readers about the sustainability of coast and coastal environments, this exciting and unique book offers enlightening coverage of: the Earth's mobile crust; sediments of coastal environments; impacts of sea level change; weather systems and the effects of storms; the influence of wave energy and different tidal regimes; river deltas; coastal bays; estuaries and lagoons; tidal flats; coastal wetlands; beach and nearshore areas; coastal barriers; tidal inlets; glaciated coasts; and rocky coasts.

- Takes an extensive look at the world's varied coasts and covers the many processes that have shaped them over time
- Shows how coastal processes and landform evolution are expected to be impacted by climate change
- Includes new coverage of Hurricane Katrina and the 2005 flooding of New Orleans, Hurricane Sandy and its affect on New York and the earthquake and tsunami in the Indian Ocean and Tohoku
- Lavishly illustrated with over 400 color photographs and figures
- Draws on a wealth of author experience that broadens the content of chapters and provides for numerous and varied examples

*Beaches and Coasts, Second Edition* is an excellent text for undergraduate and graduate students of coastal geology, coastal processes and coastal environments.

## GROUNDWATER & HYDROGEOLOGY

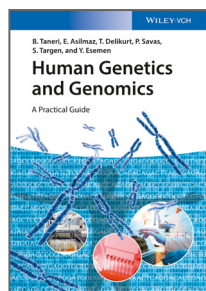
### Groundwater in Antiquity

### Groundwater in Antiquity

Michael Knight

**ISBN:** 978-1-4051-9097-8 • May 2020 • 364pp

There is a growing interest in historical groundwater thinking and use by hydrogeologists, water historians, and others. This book aims to develop a cohesive historical narrative of how many ideas and practices used today had their foundations laid down before the Scientific Revolution. In addition, it re-examines past ideas and practices to see if they can be re-used or adapted today in the light of our climatic difficulties. Archaeologists are also beginning to appreciate the role water has played in past cultures, and this book will further enhance their research.



## Human Genetics and Genomics

### A Practical Guide

Bahar Taneri, Esra Asilmaz, Turem Delikurt, Pembe Savas, Seniye Targen & Yagmur Esemem

ISBN: 978-3-527-33748-4 • May 2020 • 168pp

Finally meeting the need for a laboratory manual on human genetics, this practical guide is the perfect companion title to all major standard textbooks on the subject. The authors all have a high-level research background and are actively involved in teaching and counseling. Based on a standard curriculum in human genetics, each chapter equals one practical unit of the course and topics range from basics in human inheritance to genetics in major disease clusters and from bioinformatics and personalized medicine to genetic counseling.

### Cassidy and Allanson's Management of Genetic Syndromes, 4th Edition

## Cassidy and Allanson's Management of Genetic Syndromes, 4th Edition

John Carey, Suzanne B. Cassidy, Agatino Battaglia & David Viskochil

ISBN: 978-1-119-43267-8 • Jul 2020 • 1518pp • Previous Edition: 978-0-470-19141-5

This fourth edition of the book Cassidy's and Allanson's Management of Genetic Syndromes will be unchanged in character but will be current in its content. It will include updated information on identification (including newly-developed diagnostic criteria), genetic basis and diagnostic testing, and management for each of the 59 included disorders. The aims of this book have not changed: to provide a resource on diagnosis, genetic counseling and management for medical professionals (medical geneticists, genetic counselors, and primary care providers) caring for individuals of all ages affected by relatively common genetic syndromes. It will continue to exclude traditional metabolic disorders, which are well-covered in other resources. The format will remain essentially unchanged, though the editors will once again examine the feasibility of a brief tabular summary of recommended evaluations at the end of each chapter. (Ideally these concise summaries could be available and freely accessible online). Again, each chapter will be organized in the same manner and cover the same general topics. In addition, there will be an increase in the number of disorders slightly to approximately 60 as a result of new expertise, newly recognized conditions, and conditions whose frequency has recently been recognized to be higher than previously realized. The rationale for a new edition is to assure that information is up to date in the rapidly changing field of medical genetics and genetic diagnostic testing. The sales figures for the prior editions, and the enthusiasm with which they were received, indicate that there is a strong need for this book on the topic of managing genetic syndromes. The relatively recent availability of even more sophisticated molecular diagnostic testing for an exponentially increasing number of genetic conditions has increased the number of individuals who are identified as having them, and has made it even more imperative for primary care providers and genetic practitioners to have access to information about their appropriate management.



## An Introduction to Large Rivers

Avijit Gupta

ISBN: 978-1-118-45139-7 • Mar 2020 • 352pp

### An accessible introduction to large rivers, including coverage of the geomorphology, hydrology, ecology, and environments of large river systems

This indispensable book takes a structured and global approach to the subject of large rivers, covering geomorphology, hydrology, ecology, and anthropogenic environment. It offers a thorough foundation for readers who are new to the field and presents enlightening discussions about issues of management at the worldwide scale. The book also examines possible future adaptations that may come about due to climate change. The book has benefitted from contributions by Professor W.J. Junk on the ecology of floodplains and Professor Olav Slaymaker on the large arctic rivers.

*Introducing Large Rivers* is presented in three parts. Part 1 provides an introduction to the world's large rivers and their basins. It covers source, transfer, and storage of their water and sediment; Pleistocene inheritance; the ecology of channels and floodplains; deltas; and more. Several large rivers are discussed in the next part. These include the Amazon Mississippi, Nile, Ganga-Brahmaputra System, Mekong, and Yangtze. The last part examines changes in large rivers and our management of river systems. It studies anthropogenic alterations such as land use and deforestation in large river basins; structural control systems like dams and reservoirs on channels; and ecological changes. It finishes with chapters on the management of large rivers, covering both technical and political aspects, and the future of the world's big river systems.

*Introducing Large Rivers* is ideal as an introductory textbook on large rivers for future earth and environmental scientists and river managers. It will also benefit advanced undergraduate and graduate students studying geography, geology, ecology, and river management.

**Dynamic  
Magma  
Evolution**

**Dynamic Magma Evolution**

Francesco Vetere & Adrian Fiege

**Series:** Geophysical Monograph Series • **ISBN:** 978-1-119-52113-6 • Aug 2020 • 332pp

The coexistence of crystals and liquid like material should be considered a dynamical process whose time evolution depends on the system and on its thermodynamic conditions. Kinetics play a major role allowing possible phase transitions, such as liquid to solid. Knowing the rate at which such transformation occurs is fundamental as it defines juxtaposed eruption behavior in volcanic environments. In this case, kinetic processes are responsible for abrupt changes in rheological behaviors of magmas, resulting in low to high energy eruption. Thus, understanding magmatic processes leading to the chemical and textural signatures of volcanic products and igneous rocks requires studies that investigate both equilibrium scenarios and kinetically controlled evolution as a function of cooling, decompression, and devolatilization. *Dynamic Magma Evolution* presents an unmatched compilation of cutting-edge research and review articles on the “hot topic” of dynamic magmatic processes.

Volume highlights include:

- Deals with the dynamics of magmatic systems based on experimental, computational and natural case studies
- Provides knowledge about the role crystallization and degassing processes in magmatic environments, new methods and approaches in petrology and volcanology
- Discusses the importance of dynamic magmatic and volcanic processes, the dynamics of magma evolution at depth, magma crystallization, magma rheology, magma ascent, degassing, and eruption
- Covers up to date information about timescales of volcanic events (geo-speedometers)
- Discusses processes at depth which lead to volcanic activity (i.e., magma recharge, mixing) and how we can understand processes at depth based on volcanic products
- Covers a wide view of observations on dynamic magmatic processes, merging insights from field work with experimental results and theoretical approaches and modeling
- Provides a better understanding of magma dynamics that can improve our abilities to monitor and forecast volcanic activity

*Dynamic Magma Evolution* is a valuable resource for volcanologists, geochemists, mineralogists, and petrologists working on magmatic and volcanic processes, and natural hazard mitigation.

**Dynamics of  
The Tropical  
Atmosphere  
and Oceans**

**Dynamics of The Tropical Atmosphere and Oceans**

Peter John Webster

**Series:** Advancing Weather and Climate Science • **ISBN:** 978-0-470-66256-4 • Mar 2020 • 600pp

**This book presents a unique and comprehensive view of the fundamental dynamical and thermodynamic principles underlying the large circulations of the coupled ocean-atmosphere system**

*Dynamics of The Tropical Atmosphere and Oceans* provides a detailed description of macroscale tropical circulation systems such as the monsoon, the Hadley and Walker Circulations, El Niño, and the tropical ocean warm pool. These macroscale circulations interact with a myriad of higher frequency systems, ranging from convective cloud systems to migrating equatorial waves that attend the low-frequency background flow. Towards understanding and predicting these circulation systems.

A comprehensive overview of the dynamics and thermodynamics of large-scale tropical atmosphere and oceans is presented using both a “reductionist” and “holistic” perspectives of the coupled tropical system. The reductionist perspective provides a detailed description of the individual elements of the ocean and atmospheric circulations. The physical nature of each component of the tropical circulation such as the Hadley and Walker circulations, the monsoon, the incursion of extratropical phenomena into the tropics, precipitation distributions, equatorial waves and disturbances described in detail. The holistic perspective provides a physical description of how the collection of the individual components produces the observed tropical weather and climate. How the collective tropical processes determine the tropical circulation and their role in global weather and climate is provided in a series of overlapping theoretical and modelling constructs.

The structure of the book follows a graduated framework. Following a detailed description of tropical phenomenology, the reader is introduced to dynamical and thermodynamical constraints that guide the planetary climate and establish a critical role for the tropics. Equatorial wave theory is developed for simple and complex background flows, including the critical role played by moist processes. The manner in which the tropics and the extratropics interact is then described, followed by a discussion of the physics behind the subtropical and near-equatorial precipitation including arid regions. The El Niño phenomena and the monsoon circulations are discussed, including their covariance and predictability. Finally, the changing structure of the tropics is discussed in terms of the extent of the tropical ocean warm pool and its relationship to the intensity of global convection and climate change.

*Dynamics of the Tropical Atmosphere and Oceans* is aimed at advanced undergraduate and early career graduate students. It also serves as an excellent general reference book for scientists interested in tropical circulations and their relationship with the broader climate system.

### Structure and Function of the Bacterial Genome

## Structure and Function of the Bacterial Genome

Charles J. Dorman

ISBN: 978-1-119-30879-9 • Apr 2020 • 416pp

**Presents an integrated view of the expression of bacterial genetic information, genome architecture and function, and bacterial physiology and pathogenesis**

This book blends information from the very latest research on bacterial chromosome and nucleoid architecture, whole-genome analysis, cell signaling, and gene expression control with well-known gene regulation paradigms from model organisms (including pathogens) to give readers a picture of how information flows from the environment to the gene, modulating its expression and influencing the competitive fitness of the microbe.

*Structure and Function of the Bacterial Genome* explores the governance of the expression of the genes that make a bacterium what it is, and updates the basics of gene expression control with information about transcription promoter structure and function, the role of DNA as a regulatory factor (in addition to its role as a carrier of genetic information), small RNAs, RNAs that sense chemical signals, ribosomes and translation, posttranslational modification of proteins, and protein secretion. It looks at the forces driving the conservation and the evolution of the dynamic genome and offers chapters that cover DNA replication, DNA repair, plasmid biology, recombination, transposition, the roles of repetitive DNA sequences, horizontal gene transfer, the defense of the genome by CRISPR-Cas, restriction enzymes, Argonaute proteins and BREX systems. The book finishes with a chapter that gives an integrated overview of genome structure and function.

- Blends knowledge of gene regulatory mechanisms with a consideration of nucleoid structure and dynamics
- Offers a 'DNA-centric' approach to considering transcription control
- Views horizontal gene transfer from a gene regulation perspective
- Assesses the opportunities and limitations of designing synthetic microbes or rewiring existing ones

*Structure and Function of the Bacterial Genome* is an ideal book for graduate and undergraduate students studying microbial cell biology, bacterial pathogenesis, gene regulation, and molecular microbiology. It will also appeal to principal investigators conducting research on these and related topics and researchers in synthetic biology and other arms of biotechnology.

### Bailey's Industrial Oil and Fat Products, 7th Edition

## Bailey's Industrial Oil and Fat Products, 7th Edition

Fereidoon Shahidi

ISBN: 978-1-119-25788-2 • Jul 2020 • 4200pp

First published in 1945, Bailey's has become the standard reference on the food chemistry and processing technology related to edible oils and the nonedible by-products derived from oils.

The 7th edition of this exhaustively comprehensive bible of oils and fats processing has been fully updated and revised throughout to reflect the latest industry trends and technical developments. The 75 chapters and six volumes of the 6th edition (published in 2005) have now been expanded to 114 chapters over seven volumes, including a brand new volume dedicated to lipids and health. This reflects the ever increasing emphasis on the link between diet and health, and the need to combat chronic health conditions through healthier food product choices.

Other new topics covered include polar lipids; analysis of lipid triacylglycerols; camelina and other high alpha-linolenic acid oils; medium-chain oils; sterols and waxes; fats and oils in fish feed formulation; new zero trans formulations and marine oils as biodiesel.

The volumes of the 7th edition: 1: Edible Oil and Fat Products: Chemistry, Properties, and Safety Aspects 2: Edible Oil and Fat Products: Edible Oils 3: Edible Oil and Fat Products: Specialty Oils and Oil Products 4: Edible Oil and Fat Products: Products and Applications 5: Edible Oil and Fat Products: Processing Technologies 6: Edible Oil and Fat Products: Industrial and Nonedible Products from Oils and Fats 7: Edible Oil and Fat Products: Lipids and Health

### Introduction to Paleobiology and the Fossil Record, 2nd Edition

#### Introduction to Paleobiology and the Fossil Record, 2nd Edition

Michael J. Benton & David A. T. Harper

ISBN: 978-1-119-27285-4 • Jun 2020 • 640pp

This book presents a comprehensive overview of the science of the history of life. Paleobiologists bring many analytical tools to bear in interpreting the fossil record and the book introduces the latest techniques, from multivariate investigations of biogeography and biostratigraphy to engineering analysis of dinosaur skulls, and from homeobox genes to cladistics.

All the well-known fossil groups are included, including microfossils and invertebrates, but an important feature is the thorough coverage of plants, vertebrates and trace fossils together with discussion of the origins of both life and the metazoans. All key related subjects are introduced, such as systematics, ecology, evolution and development, stratigraphy and their roles in understanding where life came from and how it evolved and diversified.

Unique features of the book are the numerous case studies from current research that lead students to the primary literature, analytical and mathematical explanations and tools, together with associated problem sets and practical schedules for instructors and students.

## PLANT BIOCHEMISTRY

### Plant Nucleotide Metabolism

#### Plant Nucleotide Metabolism

##### Biosynthesis, Degradation and Alkaloid Formation

Hiroshi Ashihara, Alan Crozier & Izar A. Ludwig

ISBN: 978-1-119-47612-2 • Mar 2020 • 456pp

All organisms produce nucleobases, nucleosides, and nucleotides of purines and pyrimidines. However, while there have been a number of texts on nucleotide metabolism in microorganisms and humans, the presence of these phenomena in plant life has gone comparatively unexplored. This ground-breaking new book is the first to focus exclusively on the aspects of purine nucleotide metabolism and function that are particular to plants, making it a unique and essential resource.

The authors provide a comprehensive break down of purine nucleotide structures and metabolic pathways, covering all facets of the topic. Furthermore, they explain the role that purine nucleotides can play in plant development, as well as the effects they may have on human health when ingested.

*Plant Nucleotide Metabolism* offers a unique and important resource to all students, researchers, and lecturers working in plant biochemistry, physiology, chemistry, agricultural sciences, nutrition, and associated fields of research.

### Lignocellulosic Biorefining Technologies

#### Lignocellulosic Biorefining Technologies

Avinash P. Ingle, Anuj Kumar Chandel & Silvio Silverio da Silva

ISBN: 978-1-119-56882-7 • Mar 2020 • 376pp

##### A text to the advances and development of novel technologies in the production of high-value products from economically viable raw materials

*Lignocellulosic Biorefining Technologies* is an essential guide to the most recent advances and developments of novel technologies in the production of various high-value products from economically viable raw materials. Written by a team of experts on the topic, the book covers important topics specifically on production of economical and sustainable products such as various biofuels, organic acids, enzymes, biopigments, biosurfactants, etc.

The book highlights the important aspects of lignocellulosic biorefining including structure, function, and chemical composition of the plant cell wall and reviews the details about the various components present in the lignocellulosic biomass and their characterizations. The authors explore the various approaches available for processing lignocellulosic biomass into second generation sugars and focus on the possibilities of utilization of lignocellulosic feedstocks for the production of biofuels and biochemicals. Each chapter includes a range of clear, informative tables and figures, and contains relevant references of published articles. This important text:

- Provides cutting-edge information on the recent developments in lignocellulose biorefinery
- Reviews production of various economically important and sustainable products, such as biofuels, organic acids, biopigments, and biosurfactants
- Highlights several broad-ranging areas of recent advances in the utilization of a variety of lignocellulosic feedstocks
- Provides a valuable, authoritative reference for anyone interested in the topic

Written for post-graduate students and researchers in disciplines such as biotechnology, bioengineering, forestry, agriculture, and chemical industry, *Lignocellulosic Biorefining Technologies* is an authoritative and updated guide to the knowledge about various biorefining technologies.

**Protective Chemical Agents in the Amelioration of Plant Abiotic Stress**

**Protective Chemical Agents in the Amelioration of Plant Abiotic Stress**

Biochemical and Molecular Perspectives

Aryadeep Roychoudhury & Durgesh K. Tripathi

ISBN: 978-1-119-55163-8 • May 2020 • 576pp

**A guide to the chemical agents that protect plants from various environmental stressors**

*Protective Chemical Agents in the Amelioration of Plant Abiotic Stress* offers a guide to the diverse chemical agents that have the potential to mitigate different forms of abiotic stresses in plants. Edited by two experts on the topic, the book explores the role of novel chemicals and shows how using such unique chemical agents can tackle the oxidative damages caused by environmental stresses.

Exogenous application of different chemical agents or chemical priming of seeds presents opportunities for crop stress management. The use of chemical compounds as protective agents has been found to improve plant tolerance significantly in various crop and non-crop species against a range of different individually applied abiotic stresses by regulating the endogenous levels of the protective agents within plants. This important book:

- Explores the efficacy of various chemical agents to eliminate abiotic stress
- Offers a groundbreaking look at the topic and reviews the most recent advances in the field
- Includes information from noted authorities on the subject
- Promises to benefit agriculture under stress conditions at the ground level

Written for researchers, academicians, and scientists, *Protective Chemical Agents in the Amelioration of Plant Abiotic Stress* details the wide range of protective chemical agents, their applications, and their intricate biochemical and molecular mechanism of action within the plant systems during adverse situations.

**Plant Pathology and Plant Pathogens, 4th Edition**

**Plant Pathology and Plant Pathogens, 4th Edition**

John A. Lucas

ISBN: 978-1-118-89375-3 • Jun 2020 • 384pp • Previous Edition: 978-0-632-03046-0

**An updated guide to plant pathogens and their management**

The impact of plant disease is far-reaching. Its effects are felt not only in the spheres of agriculture and horticulture, but also in human health and wellbeing. The challenges of population growth, climate change and global food security all increase the need to protect crops from disease and reduce the losses caused by plant pathogens. This requires ongoing research and novel solutions, making the detailed analysis offered by *Plant Pathology and Plant Pathogens* more relevant than ever.

Striking a balance between laboratory- and field-based aspects of its subject, this revised fourth edition of the text places plant disease in a wide biological context. Its contents cover causal agents and diagnosis, host-pathogen interactions, and disease management, including breeding for resistance, chemical, biological and integrated control. New to this edition are updated sections on molecular epidemiology, biosecurity, pathogenomics, and the biotechnological advances that are helping scientists make great strides in the fight against plant disease.

- Authored by a leading authority on plant pathology
- Offers new coverage of recent advances in molecular genetics and genomics, biotechnology, and plant breeding
- Places emphasis on interaction biology and biological concepts, such as immunity and comparisons with animal systems
- Includes access to a supplementary website featuring slides of all figures in the book

*Plant Pathology and Plant Pathogens* is an ideal textbook for graduate and upper-level undergraduate students in biology, botany, agricultural sciences, applied microbiology, plant-microbe interactions, and related subjects. It will also be a practical and enlightening resource for professionals in agricultural institutions, along with crop consultants seeking additional training or information.



## Metalloids in Plants

### Metalloids in Plants Advances and Future Prospects

Dr. Rupesh Deshmukh, Durgesh K. Tripathi & Dr. Gea Guerriero

ISBN: 978-1-119-48719-7 • Mar 2020 • 520pp

#### Understanding metalloids and the potential impact they can have upon crop success or failure

Metalloids have a complex relationship with plant life. Exhibiting a combination of metal and non-metal characteristics, this small group of elements – which includes boron (B), silicon (Si), germanium (Ge), arsenic (As), antimony (Sb), and tellurium (Te) – may hinder or enhance the growth and survival of crops. The causes underlying the effects that different metalloids may have upon certain plants range from genetic variance to anatomical factors, the complexities of which can pose a challenge to botanists and agriculturalists of all backgrounds.

With *Metalloids in Plants*, a group of leading plant scientists present a complete guide to the beneficial and adverse impacts of metalloids at morphological, anatomical, biochemical, and molecular levels. Insightful analysis of data on genetic regulation helps to inform the optimization of farming, indicating how one may boost the uptake of beneficial metalloids and reduce the influence of toxic ones. Contained within this essential new text, there are:

- Expert analyses of the role of metalloids in plants, covering their benefits as well as their adverse effects
- Explanations of the physiological, biochemical, and genetic factors at play in plant uptake of metalloids
- Outlines of the breeding and genetic engineering techniques involved in the generation of resistant crops

Written for students and professionals in the fields of agriculture, botany, molecular biology, and biotechnology, *Metalloids in Plants* is an invaluable overview of the relationship between crops and these unusual elements.

## Root Systems in Sustainable Agricultural Intensification

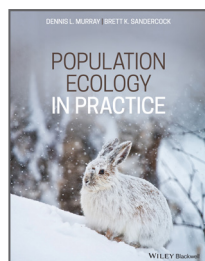
### Root Systems in Sustainable Agricultural Intensification

Zed Rengel & Ivica Djalovic

ISBN: 978-1-119-52540-0 • Jul 2020 • 504pp

Improved root systems capable of efficient acquisition of water and nutrients from soils underpin increased efficiency of utilisation of soil resources essential for sustainable intensification of food production. *The Roots of Sustainable Agricultural Intensification* summarises the state-of-the-art knowledge in theoretical and practical aspects of agricultural management to enhance root system architecture and function that underpin efficient use of water and nutrient resources in various food, feed and fibre production systems. This book will emphasise agricultural measures that enhance root capacity to develop and function under a range of water and nutrient regimes to (i) maximise food, feed and fibre production per unit of resources utilised in the agricultural landscapes and (ii) minimise undesirable water and nutrient losses to the environment. A variety of soil, plant, agronomy, farming systems, breeding, molecular and other aspects are considered. This reference book will provide professionals, researchers, and students with an indepth view of various aspects of root structure and function in intensive agricultural systems, underpinning efficient water and nutrient use in food, feed and fibre production. The book will cover topics related to global economic and social issues related to, or underpinning, agricultural intensification, discuss soil-root interactions from the molecular to the agroecosystem points of view, describe various strategies and mechanisms that underpin increased water- and nutrient-use efficiency, and bring together natural and agricultural systems to emphasise the continuity of traits and mechanisms.

## POPULATION & COMMUNITY ECOLOGY



### Population Ecology in Practice

Dennis L. Murray & Brett K. Sandercock

ISBN: 978-0-470-67414-7 • Mar 2020 • 448pp

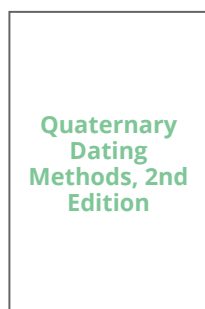
#### A synthesis of contemporary analytical and modeling approaches in population ecology

The book provides an overview of the key analytical approaches that are currently used in demographic, genetic, and spatial analyses in population ecology. The chapters present current problems, introduce advances in analytical methods and models, and demonstrate the applications of quantitative methods to ecological data. The book covers new tools for designing robust field studies; estimation of abundance and demographic rates; matrix population models and analyses of population dynamics; and current approaches for genetic and spatial analysis. Each chapter is illustrated by empirical examples based on real datasets, with a companion website that offers online exercises and examples of computer code in the R statistical software platform.

- Fills a niche for a book that emphasizes applied aspects of population analysis
- Covers many of the current methods being used to analyse population dynamics and structure
- Illustrates the application of specific analytical methods through worked examples based on real datasets
- Offers readers the opportunity to work through examples or adapt the routines to their own datasets using computer code in the R statistical platform

*Population Ecology in Practice* is an excellent book for upper-level undergraduate and graduate students taking courses in population ecology or ecological statistics, as well as established researchers needing a desktop reference for contemporary methods used to develop robust population assessments.

## QUATERNARY SCIENCE & GLACIOLOGY



### Quaternary Dating Methods, 2nd Edition

Mike Walker

ISBN: 978-1-119-41262-5 • May 2020 • 352pp • Previous Edition: 978-0-470-86926-0, 978-0-470-86927-7

This introductory textbook introduces the basics of dating, the range of techniques available and the strengths and limitations of each of the principal methods.

Coverage includes:

- the concept of time in Quaternary Science and related fields
- the history of dating from lithostratigraphy and biostratigraphy
- the development and application of radiometric methods
- different methods in dating: radiometric dating, incremental dating, relative dating and age equivalence

Presented in a clear and straightforward manner with the minimum of technical detail, this text is a great introduction for both students and practitioners in the Earth, Environmental and Archaeological Sciences.

## SEDIMENTOLOGY & STRATIGRAPHY



### Tectonic Controls on Carbonate Platform Evolution

Steven Dorobek

ISBN: 978-1-4051-9462-4 • Jul 2020 • 320pp

Carbonate platforms provide a high-resolution record of sea-level fluctuations, paleoclimatic change, paleoceanographic circulation patterns, and biological evolution, yet the influence of tectonic deformation on platform sedimentation remains poorly understood at a variety of temporal and spatial scales. This book covers all aspects of tectonic deformation and its influence on carbonate platform sedimentation. All scales of deformation are described and assessed. The role of tectonics on platform location, platform morphology, internal stratigraphic patterns, and facies distributions within individual platforms is examined in detail, using both theoretical approaches and observational data.

## Carbonate Reservoirs

### Carbonate Reservoirs

Rachel Wood & Sebastian Geiger

ISBN: 978-1-119-28043-9 • Jun 2020 • 448pp

This book provides a comprehensive and process-based account of the genesis of carbonate rocks, from which the authors derive and describe current modelling techniques that seek to quantify their flow behaviour in the subsurface.

The book deals with the physical and chemical processes that govern fluid flow which can in turn lead to testable and predictive models for reservoir behaviour. It takes a novel, highly multi-disciplinary approach that nonetheless maintains a holistic narrative thread. The book describes complex phenomena in order to show how a process-based understanding across several disciplines can - in sum - result in a better clarity of vision and approach to understanding these economically important porous media.

## SOIL SCIENCE & GEOARCHAEOLOGY

### Practical and Theoretical Geoarchaeology, 2nd Edition

### Practical and Theoretical Geoarchaeology, 2nd Edition

Paul Goldberg, Richard Macphail & Sarah Sherwood

ISBN: 978-1-119-41319-6 • Jun 2020 • 500pp • Previous Edition: 978-0-632-06044-3

*Practical and Theoretical Geoarchaeology* provides an invaluable overview of geoarchaeology and how it can be used effectively in the study of archaeological sites and contexts. Taking a pragmatic and functional approach, this book presents:

- a fundamental, broad-based perspective of the essentials of modern geoarchaeology in order to demonstrate the breadth of the approaches and the depth of the problems that it can tackle.
- the rapid advances made in the area in recent years, but also gives the reader a firm grasp of conventional approaches.
- covers traditional topics with the emphasis on landscapes, as well as anthropogenic site formation processes and their investigation.
- provides guidelines for the presentation of field and laboratory methods and the reporting of geoarchaeological results.
- essential reading for archaeology undergraduate and graduate students, practicing archaeologists and geoscientists who need to understand and apply geoarchaeological methodologies.

## SOLAR ENERGY & PHOTOVOLTAICS

### Space Physics and Aeronomy, Volume 4

### Space Physics and Aeronomy, Volume 4

Thermospheres and Mesospheres in the Solar System

Wenbin Wang & Yongliang Zhang

ISBN: 978-1-119-50756-7 • May 2020 • 388pp

#### A comprehensive overview of the structure and variability of the upper atmosphere

Earth's upper atmosphere is an open system that is strongly influenced by energy and momentum inputs from both above and below. New techniques have provided insights into dynamics, energetics, and chemical processes in the upper atmosphere.

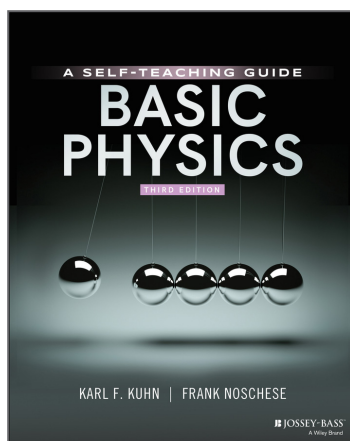
*Thermospheres and Mesospheres in the Solar System* presents an overview of key research advances in measurement and modeling techniques, along with remaining challenges for understanding the state and variability of the upper atmospheric system.

Volume highlights include:

- Insights into the interconnections between different areas of upper atmospheric science
- Appreciation of the dynamics and complexity of the global upper atmospheric system
- Techniques for observing and measuring the upper atmosphere
- Responses of the upper atmosphere to external drivers

# Social Sciences, Humanities & Teacher Education





ISBN: 978-1-119-62990-0

**Previous Edition:**  
978-0-471-13447-3

Jun 2020 • 304pp

## Basic Physics, 3rd Edition

### A Self-Teaching Guide

Frank Neal-Noschese & Karl F. Kuhn

Previous Editions Licensed in Russian, Turkish



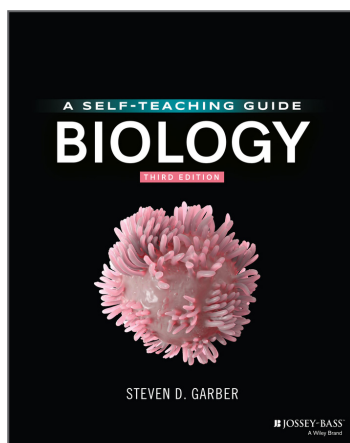
*Basic Physics: A Self-Teaching Guide, Third Edition* is the most practical, complete, and easy-to-use guide available for understanding physics and the physical world. Even if you don't consider yourself a "science" person, this book helps make learning key concepts a pleasure, not a chore. Whether you need help in a course, want to review the basics for an exam, or simply have always been curious about such physical phenomena as energy, sound, electricity, light, and color, you've come to the right place! This fully up-to-date edition of Basic Physics:

- Has been revised to reflect research-based pedagogy on how people learn physics
- Requires no math—mathematical treatments and applications are included in optional sections so that you can choose either a mathematical or nonmathematical approach
- Lets you work at your own pace with a helpful question-and-answer format
- Lists objectives for each chapter—you can skip ahead or find extra help if you need it
- Reinforces what you learn with end-of-chapter self-tests

### About the Authors

**Frank Noschese** earned his B.A. in Physics and M.A. in Teaching from Cornell University. He has spent his entire 21-year teaching career at John Jay High School in Cross River, New York, where he currently teaches College-Preparatory Physics and Advanced Placement Physics C. He has won the Paul W. Zitzewitz Excellence in K-12 Teaching Award from AAPT (2018) and the Presidential Award for Excellence in Mathematics and Science Teaching (2011). In addition, Frank is a National Board Certified Teacher and New York State Master Teacher. He is a member of the American Association of Physics Teachers, the American Modeling Teachers Association, and STEMTeachersNYC. His classroom has been featured on MSNBC.com and CUNY-TV. In 2012, he was an invited speaker for TEDxNYED where he spoke about teaching science using inquiry and Modeling Instruction.

**Karl F. Kuhn** is Professor of Physics at Eastern Kentucky University



ISBN: 978-1-119-64502-3

**Previous Edition:**  
978-0-471-22330-6

Jun 2020 • 432pp

## Biology, 3rd Edition

### A Self-Teaching Guide

Steven Daniel Garber

Previous Editions Licensed in Turkish



#### An Interactive, Easy-to-Use Introductory Guide to Major Biology Concepts

For students looking for a solid introduction to Biology, the new 3rd Edition of *Biology: A Teaching Guide* is the perfect learning tool. The latest edition has been updated to include the most up-to-date information on everything from photosynthesis to physiology.

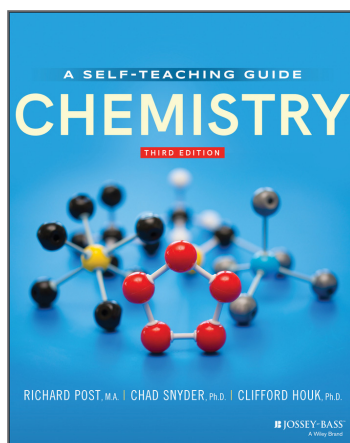
For students preparing for exams or individuals who want to review material from years past, the step-by-step format is designed to help students and teachers alike easily understand complex concepts, key terms, and frequently asked questions. The guide includes a comprehensive glossary and self-test questions in each chapter, allowing students to reinforce their knowledge and better understand the concepts.

Thoroughly updated with self-teaching practice exams and questions, this comprehensive guide is designed to give students the tools they need to master the fundamental concepts and critical definitions behind biology.

#### About the Author

**Steven Daniel Garber**, PH.D., has taught biology in public schools and at Cornell University, the City University of New York, and Rutgers University. He has worked as a biologist at the American Museum of Natural History, the National Park Service, Yale University's Peabody Museum of Natural History, and the New York City Parks Department. Garber is the author of *The Urban Naturalist* and *Biology: A Self-Teaching Guide* (Wiley).





**Series:** Wiley Self-Teaching Guides

**ISBN:** 978-1-119-63256-6

**Previous Edition:**  
978-0-471-12120-6

Jun 2020 • 368pp

## Chemistry, 3rd Edition

### Concepts and Problems, A Self-Teaching Guide

Richard Post, Chad Snyder & Clifford C. Houk



Previous Editions Licensed in Turkish

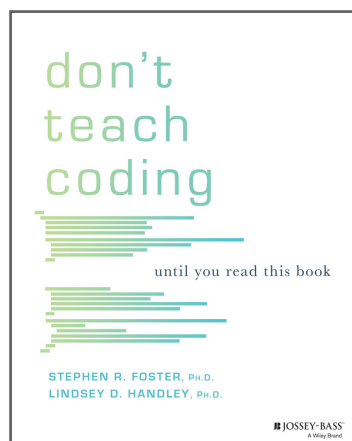
Did you know that all of the elements in the known cosmos can be listed in a table on a single sheet of paper and that chemical combinations of those elements make up the thousands of substances that we interact with every day from space craft propulsion to the batteries in our electric cars? That's chemistry. This book will help you to understand the concepts and principles of chemistry and chemical reactions in a manner that allows you to read a short section and then interact with that information in a way that will reinforce what you just learned in a step-by-step tutorial manner. It's designed so that you can learn the subject on your own at your own pace and is complete with self-tests and references for review. About the only requirement is some basic high school math. The book covers most of a typical college-level course in general chemistry and gently leads a student to deeper levels and concepts with practice, critical thinking, problem solving and self-assessment at every stage.

#### About the Authors

**Richard Post** is Assistant Dean Emeritus, Board Member, and Webmaster at Ohio University. Richard continues to author magazine feature articles and monthly columns dealing with engineering, development, history and impact of electronics and communications technology in both the military and the home from World War I to the recent past.

**Chad Snyder** is the Chair of the Department of Science and Mathematics at Grace College and is a member of the American Chemical Society and frequently presents his research at their conferences. In addition, Snyder peer-reviews publications in chemistry journals that range from organic, organometallic, and analytical chemistry. In the arena of publishing companies, Snyder frequently serves as a subject matter expert, multimedia author, interactive SME, end-of-chapter problem author, and text bank question author for a variety of chemistry titles.

**Clifford C. Houk** is a Professor of Health Science at Ohio University, and specializes in inorganic chemistry.



ISBN: 978-1-119-60262-0

Apr 2020 • 288pp

## Don't Teach Coding Until You Read This Book

Lindsey Handley & Stephen Foster



**The definitive resource for understanding what coding is, designed for educators and parents**

Even though the vast majority of teachers, parents, and students understand the importance of computer science in the 21st century, many struggle to find appropriate educational resources. *Don't Teach Coding: Until You Read This Book* fills a gap in current knowledge by explaining exactly what coding is and addressing why and how to teach the subject. Providing a historically grounded, philosophically sensitive description of computer coding, this book helps readers understand the best practices for teaching computer science to their students and their children.

The authors, experts in teaching computer sciences to students of all ages, offer practical insights on whether coding is a field for everyone, as opposed to a field reserved for specialists. This innovative book provides an overview of recent scientific research on how the brain learns coding, and features practical exercises that strengthen coding skills. Clear, straightforward chapters discuss a broad range of questions using principles of computer science, such as *why we should teach students to code* and *is coding a science, engineering, technology, mathematics, or language?* Helping readers understand the principles and issues of coding education, this book:

- Helps those with no previous background in computer science education understand the questions and debates within the field
- Explores the history of computer science education and its influence on the present
- Views teaching practices through a computational lens
- Addresses why many schools fail to teach computer science adequately
- Explains contemporary issues in computer science such as the language wars and trends that equate coding with essential life skills like reading and writing

*Don't Teach Coding: Until You Read This Book* is a valuable resource for K-12 educators in computer science education and parents wishing to understand the field to help chart their children's education path.

### About the Author

**Stephen Foster** is a PhD graduate from UCSD in the field of Computer Science. He is an expert in video game end-user programming and computer science education. Lindsey Handley has a Ph.D. in bio-chemistry and a background in business. Foster and Handley have a strong background in computer science, learning sciences, and teaching computer sciences to people of all ages. Together, they have launched several projects in this space: [learntomod.com](http://learntomod.com), [codespells.org](http://codespells.org) and co-found a San Diego based education start-up called ThoughtSTEM.



ISBN: 978-1-119-59065-1

May 2020 • 240pp

## Janice VanCleave's Big Book of Science Experiments

Janice VanCleave



Janice VanCleave once again ignites children's love for science in her all-new book of fun experiments—featuring a fresh format, new experiments, and updated content standards

From everyone's favorite science teacher comes *Janice VanCleave's Big Book of Science Experiments*. This user-friendly book gets kids excited about science with lively experiments designed to spark imaginations and encourage science learning. Using a few handy supplies, you will have your students exploring the wonders of science in no time. Simple step-by-step instructions and color illustrations help you easily demonstrate the fundamental concepts of astronomy, biology, chemistry, and more. Children will delight in making their own slime and creating safe explosions as they learn important science skills and processes.

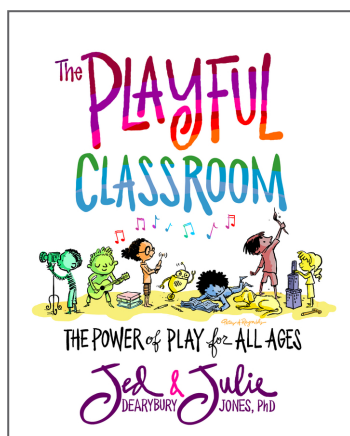
Author Janice VanCleave passionately believes that *all* children can learn science. She has helped millions of students experience the magic and mystery of science with her time-tested, thoughtfully-designed experiments. This book offers both new and classic activities that cover the four dimensions of science—physical science, astronomy, Biology, and Earth Science—and provide a strong foundation in science education for students to build upon. An ideal resource for both classroom and homeschool environments, this engaging book:

- Enables students to experience science firsthand and discuss their observations
- Offers low-prep experiments that require simple, easily-obtained supplies
- Presents a modern, full-color design that appeals to students
- Includes new experiments, activities, and lessons
- Correlates to National Science Standards

*Janice VanCleave's Big Book of Science Experiments* is a must-have book for the real-world classroom, as well as for any parent seeking to teach science to their children.

### About the Author

**Janice VanCleave** taught science in the classroom for 27 years. Never satisfied with just doing the lessons in the textbook, she was always researching in an effort to make her lessons fun and magical. Her work in the classroom led to her publishing career. She has written more than 50 science books and has sold more than 2 million copies. In addition to authoring science books, she created the popular website, [www.scienceprojectideasforkids.com](http://www.scienceprojectideasforkids.com), and has tutored thousands of students and educators from around the world through her website.



ISBN: 978-1-119-67439-9

Jul 2020 • 288pp

# The Playful Classroom

Jed Dearybury & Julie Jones



**Shows teachers how and why they should bring play into the classroom to make learning meaningful, relevant, and fun.**

Research studies show that all students—young and old, rich and poor, urban and rural—benefit immensely from classrooms filled with art, creativity, and laughter. Fun, playfulness, creative thinking, and individual expression reinforce positive experiences, which in turn lead to more engaged students, better classroom environments, and successful learning outcomes. Designed for K-12 educators, *The Playful Classroom* describes how teachers can develop a playful mindset for giving students meaningful, relevant and fun learning experiences. This unique real-world guide provides you with everything you need to incorporate engaging, hands-on lessons and creative activities, regardless of the level and subject you teach.

Building on contemporary and seminal works on learning theory and play pedagogy, the authors explain how to inspire your students by bringing play into your classroom. This clear, user-friendly guide supplies practical strategies and effective solutions for adding the missing ingredients to your classroom culture. Access to the authors' companion website provides videos, learning experiences, and downloadable teaching and learning resources. Packed with relatable humor, proven methods, and valuable insights, this book enables you to:

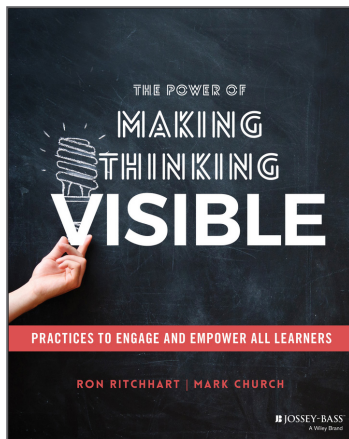
- Provide meaningful experiences that will benefit students both in school and later in life
- Combine the principles of PLAY with traditional curricula to encourage creative learning
- Promote trust, collaboration, and growth in students
- Develop a playful mindset for bringing the arts into every lesson
- Foster critical thinking in any school community

*The Playful Classroom: The Power of Play for All Ages* is a must-have resource for K-12 educators, higher education professionals, and readers looking for education-based professional development and training resources.

## About the Authors

**Jed Dearybury** (Boiling Springs, SC) is an educational leader providing quality, hands-on, engaging learning experiences for students and teachers across the country. Jed has been featured in GQ Magazine as Male Leader of the Year, met President Obama as the SC winner of the Presidential Award for Excellence in Math and Science Teaching, and was named as a top 5 finalist for South Carolina Teacher of the Year because of his passion, love, and success in education.

**Julie Jones** (Spartanburg, SC) is an associate professor at Converse College with a focus on education. She maintains an active research agenda that includes both practitioner-oriented articles as well as experimental, field-based research studies. Her research interests include educational technology, effective pedagogy, and factors contributing to the success of at-risk students.



ISBN: 978-1-119-62604-6

May 2020 • 320pp

# The Power of Making Thinking Visible

## Practices to Engage and Empower All Learners

Ron Ritchhart & Mark Church



**The long-awaited follow-up to *Making Thinking Visible*, provides new thinking routines, original research, and unique global case studies**

Visible Thinking—a research-based approach developed at Harvard’s Project Zero – prompts and promotes students’ thinking. This approach has been shown to positively impact student engagement, learning, and development as thinkers. Visible Thinking involves using thinking routines, documentation, and effective questioning and listening techniques to enhance learning and collaboration in any learning environment. *The Power of Making Thinking Visible* explains how educators can effectively use thinking routines and other tools to engage and empower students as learners and transform classrooms into places of deep learning.

Building on the success of the bestselling *Making Thinking Visible*, this highly-anticipated new book expands the work of the original by providing 18 new thinking routines based on new research and work with teachers and students around the world. Original content explains how to use thinking routines to maximum effect in the classroom, engage students exploration of big ideas, link thinking routines to formative assessment, and more. Providing new research, new global case studies, and new practices, this book:

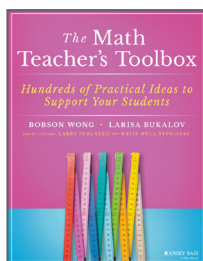
- Focuses on the power that thinking routines can bring to learning
- Provides practical insights on using thinking routines to facilitate student engagement
- Highlights the most effective techniques for using thinking routines in the classroom
- Identifies the skillsets and mindsets needed to truly make thinking visible
- Features actionable classroom strategies that can be applied across grade levels and content areas

Written by researchers from Harvard’s Project Zero, *The Power of Making Thinking Visible: Using Routines to Engage and Empower Learners* is an indispensable resource for K-12 educators and curriculum designers, higher education instructional designers and educators, and professional learning course developers.

### About the Authors

**Ron Ritchhart** (Cambridge, MA) is a Senior Research Associate at Harvard Project Zero and Fellow at the University of Melbourne, Australia. His current research focuses on developing intellectual character, making thinking visible, and enhancing school and classroom culture to promote deep learning. He is the author of the best selling books *Making Thinking Visible* and *Creating Cultures of Thinking*.

**Mark Church** (Seattle, WA) has been an educator for over twenty years and has particular interest in helping teachers and school leaders think deeply about their efforts to cultivate thinking and learning opportunities for students. He works with schools and districts, encouraging efforts to create rich communities of practice for educators committed to being mindful students of those they teach and lead.



## The Math Teacher's Toolbox

### Hundreds of Practical Ideas to Support Your Students

Bobson Wong, Larisa Bukalov, Larry Ferlazzo & Katie Hull Sypnieski

**Series:** The Teacher's Toolbox Series • **ISBN:** 978-1-119-57329-6 • May 2020 • 528pp

**Math teachers will find the classroom-tested lessons and strategies in this book to be accessible and easily implemented in the classroom**

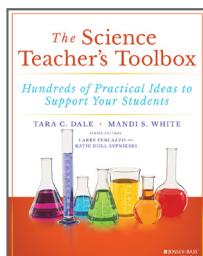
The *Teacher's Toolbox* series is an innovative, research-based resource providing teachers with instructional strategies for students of all levels and abilities. Each book in the collection focuses on a specific content area. Clear, concise guidance enables teachers to quickly integrate low-prep, high-value lessons and strategies in their middle school and high school classrooms. Every strategy follows a practical, how-to format established by the series editors.

*The Math Teacher's Toolbox* contains hundreds of student-friendly classroom lessons and teaching strategies. Clear and concise chapters, fully aligned to Common Core math standards, cover the underlying research, required technology, practical classroom use, and modification of each high-value lesson and strategy.

This book employs a hands-on approach to help educators quickly learn and apply proven methods and techniques in their mathematics courses. Topics range from the planning of units, lessons, tests, and homework to conducting formative assessments, differentiating instruction, motivating students, dealing with "math anxiety," and culturally responsive teaching. Easy-to-read content shows how and why math should be taught as a language and how to make connections across mathematical units. Designed to reduce instructor preparation time and increase student engagement and comprehension, this book:

- Explains the usefulness, application, and potential drawbacks of each instructional strategy
- Provides fresh activities for all classrooms
- Helps math teachers work with ELLs, advanced students, and students with learning differences
- Offers real-world guidance for working with parents, guardians, and co-teachers

*The Math Teacher's Toolbox: Hundreds of Practical Ideas to Support Your Students* is an invaluable source of real-world lessons, strategies, and techniques for general education teachers and math specialists, as well as resource specialists/special education teachers, elementary and secondary educators, and teacher educators.



## The Science Teacher's Toolbox

### Hundreds of Practical Ideas to Support Your Students

Tara Dale, Mandi White, Larry Ferlazzo & Katie Hull Sypnieski

**Series:** The Teacher's Toolbox Series • **ISBN:** 978-1-119-57010-3 • May 2020 • 544pp

**A winning educational formula of engaging lessons and powerful strategies for science teachers in numerous classroom settings**

The *Teacher's Toolbox* series is an innovative, research-based resource providing teachers with instructional strategies for students of all levels and abilities. Each book in the collection focuses on a specific content area. Clear, concise guidance enables teachers to quickly integrate low-prep, high-value lessons and strategies in their middle school and high school classrooms. Every strategy follows a practical, how-to format established by the series editors.

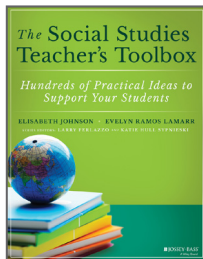
*The Science Teacher's Toolbox* is a classroom-tested resource offering hundreds of accessible, student-friendly lessons and strategies that can be implemented in a variety of educational settings. Concise chapters fully explain the research basis, necessary technology, Next Generation Science Standards correlation, and implementation of each lesson and strategy.

Favoring a hands-on approach, this book provides step-by-step instructions that help teachers to apply their new skills and knowledge in their classrooms immediately. Lessons cover topics such as setting up labs, conducting experiments, using graphs, analyzing data, writing lab reports, incorporating technology, assessing student learning, teaching all-ability students, and much more. This book enables science teachers to:

- Understand how each strategy works in the classroom and avoid common mistakes
- Promote culturally responsive classrooms
- Activate and enhance prior knowledge
- Bring fresh and engaging activities into the classroom and the science lab

Written by respected authors and educators, *The Science Teacher's Toolbox: Hundreds of Practical Ideas to Support Your Students* is an invaluable aid for upper elementary, middle school, and high school science educators as well as those in teacher education programs and staff development professionals.





## The Social Studies Teacher's Toolbox

### Hundreds of Practical Ideas to Support Your Students

Elisabeth Johnson, Evelyn Ramos, Larry Ferlazzo & Katie Hull Sypniewski

**Series:** The Teacher's Toolbox Series • **ISBN:** 978-1-119-57205-3 • May 2020 • 512pp

#### Social studies teachers will find classroom-tested lessons and strategies that can be easily implemented in the classroom

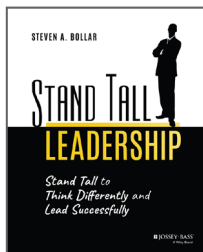
The *Teacher's Toolbox* series is an innovative, research-based resource providing teachers with instructional strategies for students of all levels and abilities. Each book in the collection focuses on a specific content area. Clear, concise guidance enables teachers to quickly integrate low-prep, high-value lessons and strategies in their middle school and high school classrooms. Every strategy follows a practical, how-to format established by the series editors.

*The Social Studies Teacher's Toolbox* contains hundreds of student-friendly classroom lessons and teaching strategies. Clear and concise chapters, fully aligned to Common Core Social Studies standards and National Council for the Social Studies standards, cover the underlying research, technology based options, practical classroom use, and modification of each high-value lesson and strategy.

This book employs a hands-on approach to help educators quickly learn and apply proven methods and techniques in their social studies courses. Topics range from reading and writing in social studies and tools for analysis, to conducting formative and summative assessments, differentiating instruction, motivating students, incorporating social and emotional learning and culturally responsive teaching. Easy-to-read content shows how and why social studies should be taught and how to make connections across history, geography, political science, and beyond. Designed to reduce instructor preparation time and increase relevance, student engagement, and comprehension, this book:

- Explains the usefulness, application, and potential drawbacks of each instructional strategy
- Provides fresh activities applicable to *all* classrooms
- Helps social studies teachers work with ELLs, advanced students, and students with learning differences
- Offers real-world guidance for addressing current events while covering standards and working with textbooks

*The Social Studies Teacher's Toolbox* is an invaluable source of real-world lessons, strategies, and techniques for general education teachers and social studies specialists, as well as resource specialists/special education teachers, elementary and secondary educators, and teacher educators.



## Stand Tall Leadership

### Stand Tall to Think Differently and Lead Successfully

Steve Bollar

**ISBN:** 978-1-119-63889-6 • Aug 2020 • 336pp

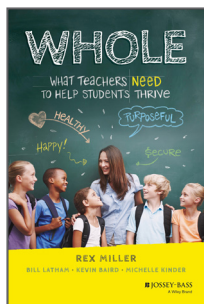
#### Stand out like you're 7 feet tall – how to think and act differently as a K-12 leader

Tall people stand out in a crowd. Tall people think and act differently: people like author Steven Bollar. He has spent his career as a principal and administrator creating school cultures that make students excited to learn and achieve their goals. In *Stand Tall Leadership*, Steven shows you that it doesn't matter what your natural height really is—you can stand tall in everything you do by thinking and acting differently from those around you. Designed for K-12 leaders, this unique and engaging book helps you overcome challenges in your school, manage effectively, inspire your staff, build strong relationships, communicate clearly, and much more.

The *Stand Tall Leadership* philosophy is all about creating the best possible environment at your school. Strong leadership skills are essential for making better decisions, maintaining your focus and priority, and maximizing outcomes with students, staff, parents, and the entire community. The principles and techniques in this book will strengthen your own leadership skills and assist you in developing effective leaders within your school. Providing hands-on tools and real-world guidance, this valuable resource will help you:

- Connect with staff, understand their needs, and set them up for success
- Keep your best employees and leaders right where they are, not chasing other opportunities
- Assess your leadership skills and make immediate, meaningful improvements
- Maintain focus in any situation to increase productivity and get outstanding results
- Repair damaged relationships that slow down progress and impede success

*Stand Tall Leadership: Stand Tall to Think Differently and Lead Successfully* is a must-read for all K-12 leaders and administrators, as well as K-12 educators looking to develop their leadership skills.



## WHOLE

### What Teachers Need to Help Students Thrive

Rex Miller, Bill Latham, Kevin Baird & Michelle Kinder

ISBN: 978-1-119-65103-1 • May 2020 • 336pp

**A shocking statistic in education reveals that 70% of K-12 teachers work under chronic stress. This revolutionary new book explains how removing stress from the classroom holds the key to improving education. The book also explains what administrators, teachers, parents, and communities can do to help accomplish a stress-free classroom.**

For years, the expert voices said “disengagement” was the crucial issue behind poor educational environments and results. Naturally, only massive reform could fix it. But what if the enormous restructuring and expenditures attacked the wrong problem?

MindShift, an organization that reframes tired and clogged conversations, pushed the old conclusions off the table and started fresh. They gathered diverse leaders in education, leadership, neuroscience, architecture, and wellness in working forums around the nation. These pivotal meetings produced *WHOLE*, a game-changing approach to education. This book captures the story and details of how the system can be remade for real and lasting benefits to everyone.

With the authors’ expertise, the book exposes the exhausted and antiquated thinking that led to the present crisis. But, *WHOLE* also proposes a new era of disruptive change that can produce happier, healthier, and more successful education for the 21st century. The book introduces the outliers, tells the stories, and presents the roadmaps to:

- Why teachers should be seen as high-performance athletes, requiring time for recovery and preparation
- How schools can become “field hospitals,” combining learning with healing
- Why space matters, how redesigning and refurbishing schools can eliminate stress and produce learning environments that are more open and inviting
- Ways to properly integrate schools within communities, building honest relationships, increasing social capital, and achieving transparency that increases success

Packed with real-life examples, new research, and solutions that you can introduce to your own schools, students, and communities, *WHOLE* shows us how to move schools from the age of stress and insecurity to an age of true educational flourishing.

## EDUCATIONAL PSYCHOLOGY



### 25 Myths about Bullying and Cyberbullying

Elizabeth K. Englander

ISBN: 978-1-118-73650-0 • May 2020 • TBApp

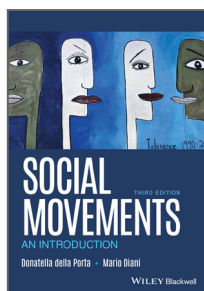
**Learn the truth about bullying in the 21st century: what to look for, and how to cope with the social problems facing today's kids.**

Whether dealing with bullying issues or worrying that they might occur, parents are faced with more challenges than ever before. In the age of the internet and social media, traditional approaches to bullying haven’t kept pace with new realities, and new problems like cyberbullying have emerged. Parents searching for ways to prevent or cope with bullying are flooded by a deluge of advice, opinions, and strategies—often conflicting or, even worse, potentially harmful. *25 Myths about Bullying and Cyberbullying* helps parents understand the causes and consequences of bullying, determine if something is truly a problem, and effectively deal with problems when they arise.

This practical guide enables parents to appreciate how modern digital environments impact a young person’s communication and relationships, recognize the most prevalent types of psychological bullying and cyberbullying, and know when and how to intervene. The author dispels common myths related to the confronting of bullies, victims seeking revenge on bullies, keeping kids off their phones and computers to prevent cyberbullying, the links between bullying and suicide, and many others. Backed by the most recent work in bullying and cyberbullying research, this book helps parents:

- Understand what causes, prevents, and stops bullying and cyberbullying
- Tell the difference between bullying issues and normal “growing pains”
- Recognize the signs and effects of psychological bullying
- Know when intervening is helpful, and when it can be destructive
- Reduce social anxieties and the potential for bullying issues in children and young adults

*25 Myths about Bullying and Cyberbullying* is an important resource for parents of school-age children and young adults, as well as staff in educational environments.



## Social Movements

### An Introduction

Donatella della Porta & Mario Diani

ISBN: 978-1-119-16765-5 • May 2020 • 352pp • Previous Edition: 978-1-4051-0282-7

**A new, fully-revised and updated edition of the leading introduction to social movements and collective action – covers a broad range of approaches in the social sciences.**

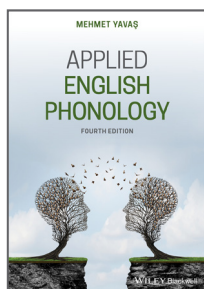
Now in its third edition, *Social Movements* is the market-leading introductory text on collective action in contemporary society. The text draws from theory-driven, systematic empirical research from across the social sciences to address central questions and concepts in the field. Sophisticated yet reader-friendly chapters offer critical analyses of relevant literature whilst exploring important issues and debates.

The global political landscape has undergone significant changes in the years since this book's initial publication, such as the spread of online protests, the resurgence of nationalist and right-wing activity, global revolts, and increased social and economic polarization. This thoroughly updated edition offers fresh discussions of recent social movements against austerity from around the world, new empirical examples, references to recent episodes of contention, an expanded comparative approach to social movement theory in the scientific literature, and more. Positioned at the intersection of sociology and political science, this book:

- Presents an empirical and engaging exploration of contemporary social movements
- Discusses topics such as organizing within social movements, eventful protests, political opportunities, symbolism and identity in collective action, and social change
- Highlights how core mechanisms of collective action operate in different movements, past and present
- Provides a conceptual methodology useful for social science students and researchers alike
- Highlights how core mechanisms of collective action operate in different movements in the past and present

Written by two internationally recognized experts in sociology and political science, the third edition of *Social Movements: An Introduction* is an essential course text and a must-read for students and scholars of sociology, political sociology, political science, and social movement studies.

## LANGUAGE TEACHING



## Applied English Phonology, 4th Edition

Mehmet Yavas

ISBN: 978-1-119-55744-9 • Jun 2020 • 339pp • Previous Edition: 978-1-118-94452-3

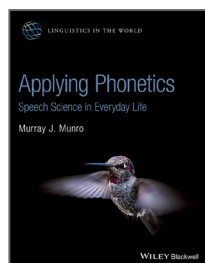
**The new edition of the leading textbook for English applied phonetics and phonology**

A leading textbook for English Phonetics and Phonology, the fourth edition of *Applied English Phonology* is an accessible, authoritative introduction to the English sound system. Providing clear explanations and numerous illustrative examples, this new edition has been fully updated with the latest research and references. Detailed discussions of fundamental concepts of applied English phonology cover phonetic elements, phonemics, English consonants and vowels, stress and intonation, structural factors in second language phonology, and much more.

Designed for students and professionals in both theoretical and applied linguistics, education, and communication sciences and disorders, this textbook contains new material throughout, including a new chapter introducing typical phonological development, patterns of simplification, and disordered phonology. Expanded sections explore topics such as contracted forms, issues in consonant and vowel transcription conventions, and regional dialects of American English. The essential introduction to phonetics and phonology, this textbook:

- Presents new and revised exercises, references, and recommended readings
- Covers developmental disorders relevant to the field of speech pathology
- Includes end-of-chapter passages that help students check their phonetic transcriptions
- Features an enhanced companion website which contains instructor resources and sound files for transcription exercises

Written by an internationally recognized scholar and educator, *Applied English Phonology, Fourth Edition* is essential reading for anyone in applied phonetics and phonology courses, as well as students and practitioners in areas of language and linguistics, TESOL, and communication sciences and disorders.



## Applying Phonetics

ISBN: 978-1-119-16454-8 • TBAp

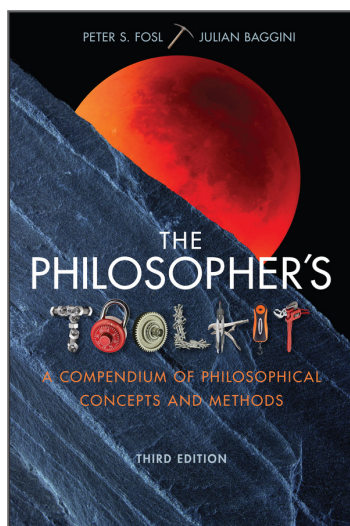
### A unique and accessible introduction to the field of phonetics through real-life applications and practical examples

The dynamic field of phonetics, the science of the structure and function of human speech, has seen exciting technological innovations and new applications in recent years. *Applying Phonetics* introduces students to the field through a unique exploratory approach that highlights practical applications and focuses on the diverse ways in which the speech sciences influence daily life. Requiring no prior knowledge of linguistics, this accessible, student-friendly textbook introduces the key concepts in phonetics and explains their relevance to contemporary applications. Even students who have completed introductory linguistics courses will discover plenty of new material in this volume.

Rather than immediately delving into complex theoretical information, the text presents a brief overview of basic concepts and then uses applications—speech synthesis, forensic speech science, language teaching—to explain the details. This unique approach increases student interest and comprehension, clearly demonstrating how speech science is beneficial to society. Engaging, easily-relatable topics include speech anatomy and physiology, the nature of normal and disordered speech development, the origins of speech, and speech applications in forensics, music, drama, film, and business. Written by a respected expert with over 25 years' experience teaching linguistics and phonetics, this textbook

- Explores the wide-ranging applications of phonetics areas such as accessibility, computer speech, education, the fine arts, and business
- Demonstrates how practical problems have been addressed through phonetics, such as the use of speech analysis for forensic purposes
- Presents real-life case studies that illustrate fundamental phonetics concepts
- Includes exercises and activities, discussion questions, an extensive glossary, further readings, and a companion website

*Applying Phonetics: Speech Science in Everyday Life* is an ideal text for undergraduate students with no prior knowledge of linguistics, as well as those needing to expand their knowledge of phonetic principles. It will appeal to students in education, computer science, cognitive science, biology, psychology, business, and music.



**ISBN:** 978-1-119-10321-9

**Previous Edition:**  
978-1-4051-9018-3

Apr 2020 • 376pp

## The Philosopher's Toolkit, 3rd Edition

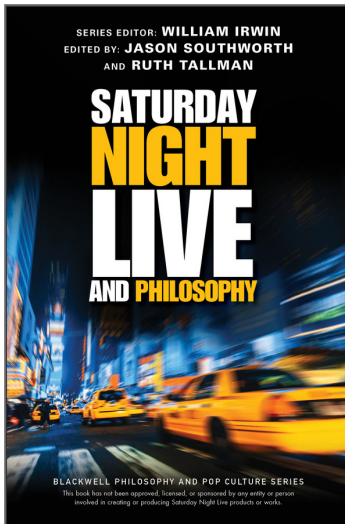
Peter S. Fosl & Julian Baggini



**A new edition of the bestselling guide to the study of philosophy: the ideal intellectual 'toolkit' for sharpening analytical skills and building philosophical acuity**

Whether used as a guide to basic principles or a resource for key concepts and methods, *The Philosopher's Toolkit* equips readers with all the intellectual 'tools' necessary for engaging closely with philosophical argument and developing fluency in the methods and language of philosophical inquiry. Featuring accessible explanations, practical examples, and expert guidance, this text empowers readers to understand traditional philosophical thinking and to engage with new ideas.

- Focuses on the practical methods and concepts necessary for philosophical inquiry
- Presents a versatile resource for both novice and advanced students in areas of philosophy, critical theory, and rhetoric
- Adopts a pluralistic approach to teaching philosophy, making this a suitable resource for many courses
- Delivers extensive cross-referenced entries, recommended readings, and updated online resources
- Covers an array of topics, from basic tools of argumentation to sophisticated philosophical principles
- Fully revised and updated to include new topics and entries as well as expanded recommended reading lists to encourage further study



**Series:** The Blackwell  
Philosophy and Pop Culture  
Series

**ISBN:** 978-1-119-53855-4

Mar 2020 • 272pp

# Saturday Night Live and Philosophy

## Deep Thoughts Through the Decades

William Irwin, Ruth Tallman & Jason Southworth



**This hilarious cast of star philosophers will make you laugh while you think as they explore the moral conundrums, ridiculous paradoxes, and wild implications of *Saturday Night Live***

Comedian-philosophers from Socrates to Sartre have always prodded and provoked us, critiquing our most sacred institutions and urging us to examine ourselves in the process. In *Saturday Night Live and Philosophy*, a star-studded cast of philosophers takes a close look at the “deep thoughts” beneath the surface of NBC’s award-winning late-night variety show and its hosts’ zany antics. In this book, philosophy and comedy join forces, just like the Ambiguously Gay Duo, to explore the meaning of life itself through the riffs and beats of the subversive parody that gives the show its razor-sharp wit and undeniable cultural and political significance. Our guest hosts raise some eyebrows with questions like:

- Is Weekend Update Fake News?
- Does SNL upset dominant paradigms or trap us in political bubbles?
- When it comes to SNL, how can we tell the difference between satire, smart-assery, and seriousness?
- Is the Ladies Man too stupid for moral responsibility?
- What is the benefit of jokes that cause outrage?
- The Church Lady has a bad case of moral superiority. How about you?
- What can Wayne and Garth teach us about living a happy life?

### About the Authors

**William Irwin** is Herve A. LeBlanc Distinguished Service Professor and Chair of Philosophy at Kings College in Pennsylvania. He is the author of *Intentionalist Interpretation* and scholarly articles on Sartre, Nietzsche, and Heidegger. Irwin originated the philosophy and popular culture genre of books with *Seinfeld and Philosophy* in 1999 and is currently the General Editor of The Blackwell Philosophy and Pop Culture series.

**Ruth Tallman** is an assistant professor of philosophy at Barry University in Florida. She has written chapters for other philosophy and popular culture volumes about the Avengers, Sherlock Holmes, and *The Walking Dead*.

**Jason Southworth** is an adjunct professor of philosophy at Fort Hays State University in Kansas. He has written chapters for many philosophy and popular culture volumes, including ones about the Avengers, *Inception*, and *The Walking Dead*.



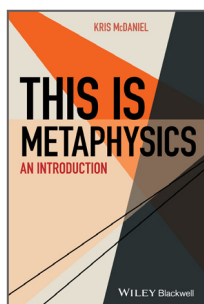
## The Good Place and Philosophy

### The Good Place and Philosophy

William Irwin & Kimberly S. Engels

**Series:** The Blackwell Philosophy and Pop Culture Series • **ISBN:** 978-1-119-63328-0 • Jul 2020 • 300pp

The latest addition to the popular Blackwell Philosophy and Pop Culture series, *The Good Place and Philosophy* is dedicated to the philosophical concepts and questions at the heart of the thoughtful and ambitious NBC sitcom *The Good Place*. Featuring contributions from *The Good Place*'s philosophical consultants, Pamela Hieronymi and Todd May, and introduced by the show's creator and showrunner, Michael Schur, this collection navigates the murky waters of moral philosophy to call into question what Chidi's ethics lessons—and the show—get right about learning to be a good person.



### This Is Metaphysics

An Introduction

Kris McDaniel

**Series:** This is Philosophy • **ISBN:** 978-1-118-40077-7 • May 2020 • 280pp

**An engaging, entertaining, and reader-friendly introduction to metaphysics – an ideal resource for students approaching the subject for the first time**

This engaging introduction to metaphysics is an all-points primer for philosophy students, also available in a tablet-ready digital format that includes web links to further resources. It provides philosophy undergraduates with focused and inclusive coverage of the philosophical study of reality, from classification to fundamental questions of being and existence. Written by a leading scholar in the field, it features dedicated bibliographies at the end of each chapter, and concludes with a persuasive affirmation of the enduring value of metaphysical inquiry.

- Engaging, insightful commentary from a leading scholar in the field
- Multi-platform digital version fully linked to extra resources
- Dedicated bibliographies for each chapter enable fine-tuned further reading
- Covers historical developments and the latest advances in metaphysics

**The Maudsley  
Prescribing Guidelines  
for Physical Health  
Conditions in Psychiatry**

**ISBN:** 978-1-119-55420-2

Oct 2020 • 600pp

# The Maudsley Prescribing Guidelines for Physical Health Conditions in Psychiatry

Author?

The Maudsley Prescribing and Practice Guidelines for Physical Health Conditions in Psychiatry (MGPH) aims to bridge the gap between psychiatric and physical health services for people with Severe Mental Illness (SMI), services which are usually geographically and organizationally separate. This will be achieved by providing psychiatric healthcare practitioners with an evidence-based practical guide to investigation and management of common physical health conditions in SMI, as well as guidance regarding appropriate referrals to medical subspecialties.

### Child and Adolescent Counseling

#### Child and Adolescent Counseling A Guide to Neuroscience-Informed Practice

Thomas A. Field & Michelle R. Ghoston

ISBN: 978-1-119-68494-7 • Apr 2020 • TBApp

Written for counselors-in-training; counselor educators; and practitioners in schools, hospitals, residential facilities, and outpatient clinics, this is the first text to illustrate how neuroscience concepts can be translated and applied to counseling with children and adolescents. Drs. Field and Ghoston first discuss general principles for child and adolescent counseling before moving into an examination of neurophysiological development from birth to age 18. They then provide in-session examples of neuroscience-informed approaches to behavior modification, play therapy, cognitive behavior therapy, biofeedback, neurofeedback, and therapeutic lifestyle change with diverse clients in a variety of settings.

Each chapter includes knowledge enhancement and skill-building features, such as learning objectives, content alignment with the 2016 CACREP Standards specific to child and adolescent counseling, explanatory diagrams, reflection questions to prompt deep processing of the material, case vignettes to demonstrate how to apply neuroscience concepts to counseling work, and quiz questions to test knowledge of key concepts. In addition, the text includes an extensive neuroscience glossary.

**Thomas A. Field, PhD**, is an assistant professor of psychiatry in the Mental Health Counseling and Behavioral Medicine program at Boston University School of Medicine. **Michelle R. Ghoston, PhD**, is an assistant professor at Wake Forest University in Winston-Salem, North Carolina.

### Coping Skills for a Stressful World, 5th Edition

#### Coping Skills for a Stressful World, 5th Edition A Workbook for Counselors and Clients

Michelle Muratori & Robert H. Haynes

ISBN: 978-1-119-68489-3 • Apr 2020 • TBApp

This comprehensive counseling tool kit for stress management provides clinicians with hundreds of client exercises and activities. Representing a variety of therapeutic approaches, this workbook offers creative techniques for helping clients handle traditional concerns, including anxiety, depression, anger, and grief in addition to heightened present-day issues, such as natural and human-made disasters, the misuse of social media, political divisiveness, social injustice, and mass shootings and other violence.

Drs. Muratori and Haynes give their personal and professional perspectives on successfully working with clients therapeutically and also invite a number of expert clinicians to share their experiences and exercises they have used that have been effective with clients. The final section of the workbook presents strategies for counselor self-care and client life after counseling.

**Michelle Muratori, PhD**, is a senior counselor at the Center for Talented Youth and a faculty associate in the Master of Science in Counseling program at Johns Hopkins University in Baltimore, Maryland.

**Robert Haynes, PhD**, is a clinical psychologist and producer of psychology video programs for Borderline Productions. The topics of stress and crisis management have been a focus in Dr. Haynes's professional career, and he led stress debriefings and taught stress management classes for more than 20 years.



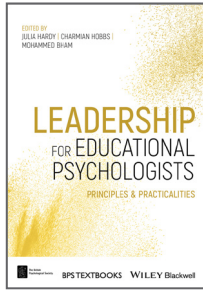
#### Great Myths of Personality

B. Donnellan

Series: Great Myths of Psychology • ISBN: 978-1-118-52135-9 • Aug 2020 • 208pp

*Great Myths of Personality* teaches critical thinking skills and key concepts of personality psychology through the discussion of popular myths and misconceptions.

- Provides a thorough look at contemporary myths and misconceptions, such as: Does birth order affect personality? Are personality tests an accurate way to measure personality? Do romantic partners need similar personalities for relationship success
- Introduces concepts of personality psychology in an accessible and engaging manner
- Focuses on current debates and controversies in the field with references to the latest research and scientific literature



## Leadership for Educational Psychologists Principles and Practicalities

Julia Hardy, Mohammed Bham & Charmian Hobbs

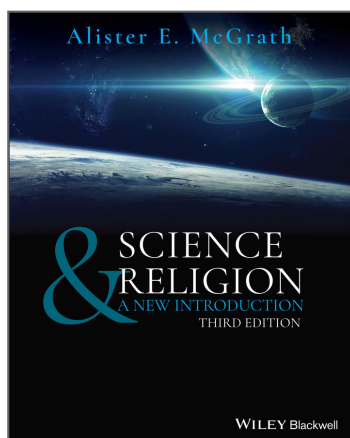
**Series:** BPS Textbooks in Psychology • **ISBN:** 978-1-119-62860-6 • Mar 2020 • 240pp

Written by and for educational psychologists, this valuable text includes reflections and practical support that will equip professionals to confidently handle the challenges inherent to leadership in the field for decades to come. The book:

- Meets a need to support new and existing educational psychologists (EPs) in understanding a range of leadership models
- Provides useful frameworks to apply to the Local Authority contexts where leaders are working
- Offers chapters that can be read independently as stand-alone topics or in sequential order
- Is derived from decades of courses for leaders of educational psychology

Written by experienced educational psychologists (EPs) for other EPs in leadership positions and those aspiring to become leaders, this unique and practical book addresses a number of themes including the debate over the nature of leadership and the growing concern for equity and ethics in practice. It emphasises the importance of building and maintaining relationships at all levels, especially during challenging times.

*Leadership for Educational Psychologists: Principles & Practicalities* offers chapters covering such topics as: managing educational psychology services (EPSs); past and present leadership frameworks; ethical leadership; change management; women in leadership; inspirational and outward-facing leadership; educational psychology within a Welsh context; appreciative enquiry; recruitment and retention; managing data and quality standards; selling educational psychology services; and more. The book finishes with a section on available support mechanisms for EPs in leadership positions. *Leadership for Educational Psychologists* will be of great benefit to educational psychologists in leadership, including existing principal and senior educational psychologists, as well as those planning to move into promoted posts within EPSs. It will also be of interest to policymakers in local government, public sector leaders who manage professionals within local authorities, and voluntary and community organisations.



**ISBN:** 978-1-119-59987-6

**Previous Edition:**  
978-1-4051-8791-6

Apr 2020 • 272pp

## Science & Religion, 3rd Edition A New Introduction

Alister E. McGrath



Previous Editions Licensed in Croatian, Finnish, Korean, Lithuanian. Simplified Chinese

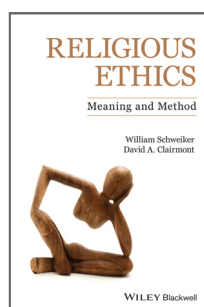
**The leading introductory textbook on the study of religion and the natural sciences, including new coverage of the latest topics in the field**

*Science and Religion* provides students with a thorough introduction to the major themes and landmark debates in the interaction of science and religion. Incorporating history, philosophy, the natural sciences, and theology, this popular textbook examines how science and religion approach central questions and discusses the relationship between the two areas through the centuries. The authoritative and accessible chapters are designed for readers with minimal knowledge of science or theology.

Written by one of the world's leading authorities on the study of religion and science, this fully revised and updated third edition addresses contemporary topics and reflects the latest conceptual developments in the field. New and expanded chapters and case studies discuss Scientism, evolutionary theodicy, the Theory of Relativity, warranted belief in science and religion, the influence of science and religion on human values, and more. The most up-to-date introduction to this exciting and rapidly growing field, this textbook:

- Offers an engaging, thematically-based approach to the subject
- Provides historical context for major events in science and religion
- Explores scientific and religious perspectives on Creation and the existence of God
- Discusses models, analogies, and issues at the intersection of science and religion
- Is supported by a series of videos that complement each chapter

One of the most respected and widely adopted textbooks in the field, *Science and Religion: A New Introduction, 3rd Edition* is an ideal resource for college, seminary, and university students in courses in science and religion; church or community courses in the relation of science and faith; and general readers looking for an inclusive overview of the field.



## Religious Ethics Meaning and Method

William Schweiker & David A. Clairmont

ISBN: 978-1-4051-9857-8 • Apr 2020 • 224pp

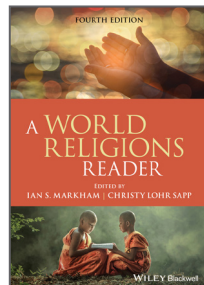
**An inclusive and innovative account of religious ethical thinking and acting in the world.**

Rather than merely applying existing forms of philosophical ethics, *Religious Ethics* defines the meaning of the field and presents a distinct and original method for ethical reflection through comparisons of world religious traditions. Written by leading scholars and educators in the field, this unique volume offers an innovative approach that reveals how religions concur and differ on moral matters, and provides practical guidance on thinking and living ethically.

The book's innovative method—integrating descriptive, normative, practical, fundamental, and metaethical dimensions of reflection—enables a far more complex and nuanced exploration of religious ethics than any single philosophical language, method, or theory can equal. First introducing the task of religious ethics, the book moves through each of the five dimensions of reflection to compare concepts such as good and evil, perplexity and wisdom, truth and illusion, and freedom and bondage in various theological contexts.

- Guides readers on understanding, assessing, and comparing the moral teachings and practices of world religions
- Applies a disciplined, scholarly approach to the subject of religious ethics
- Explores the distinctions between religious ethics and moral philosophy
- Provides a methodology which can be applied to comparative ethics for various religions
- Compares religious traditions to illuminate each of the five dimensions of ethical and moral reflection

*Religious Ethics: Meaning and Method* will help anyone interested in the relation between religion and ethics in the modern world, including those involved in general and comparative religion studies, religious and comparative ethics, and moral theory.



## A World Religions Reader, 4th Edition

Ian S. Markham & Christy Lohr Sapp

ISBN: 978-1-119-35709-4 • Mar 2020 • 408pp • **Previous Edition:** 978-1-4051-7109-0

**A comprehensive and accessible textbook which explores the traditions and beliefs of the world's living religions – the fully updated and revised new edition**

*The World Religions Reader* is an inclusive, student-friendly examination of the history, teaching, practices, and appeal of the world's major religions. Covering both the fundamentals and complexities of each religious tradition, this popular textbook brings together significant texts from scriptures and scholars, as well as writings from philosophers and other significant thinkers throughout history. Students are provided with an introduction and overview of the tradition, taken through its primary texts, and presented with a text which seeks to persuade the student of the tradition's merits.

This new edition has been thoroughly updated to be even more accessible for students new to interreligious engagement and to reflect current trends and developments in religions worldwide. Every chapter opens with a substantial overview which orients the new student and then flows into a carefully chosen set of texts – a regular textbook is now combined with a Reader. New content examines areas such as the Rastafarian tradition, while revised chapters cover secular humanism and indigenous and emerging religious traditions. The methodology of the book focuses on an empathetic approach – representing each tradition from the perspective of a conventional adherent – enabling students to develop understanding of each tradition and appreciate similarities and differences in their most typical forms.

- Invites students to study each tradition from the perspective of a follower, aiming to understand why the tradition is popular and powerful
- Explores representative passages, world-views, rituals and institutions, ethical expressions and modern outlooks for each religion
- Features discussions of interfaith perspectives on the role of women in religious traditions and the impact of world events and politics on interfaith communication
- Encourages students to consider questions of truth, the relation of religion and society, and the changing nature of a tradition in the modern world
- Includes a complete set of pedagogical tools and instructor resources, including end-of-chapter fact sheets, topic summaries, key term sections, and essay and discussion questions

*The World Religions Reader, Fourth Edition* is an ideal textbook for undergraduate and graduate courses in religion, especially for liberal arts and non-affiliated colleges, as well as general readers wishing to increase their knowledge of the world's religious traditions.



# Technology



## Machine Learning, 2nd Edition



# Machine Learning, 2nd Edition Hands-On for Developers and Technical Professionals

Jason Bell

**Dig deep into the data with a hands-on guide to machine learning with updated examples and more!**

*Machine Learning: Hands-On for Developers and Technical Professionals* provides hands-on instruction and fully-coded working examples for the most common machine learning techniques used by developers and technical professionals. The book contains a breakdown of each ML variant, explaining how it works and how it is used within certain industries, allowing readers to incorporate the presented techniques into their own work as they follow along. A core tenant of machine learning is a strong focus on data preparation, and a full exploration of the various types of learning algorithms illustrates how the proper tools can help any developer extract information and insights from existing data. The book includes a full complement of Instructor's Materials to facilitate use in the classroom, making this resource useful for students and as a professional reference.

At its core, machine learning is a mathematical, algorithm-based technology that forms the basis of historical data mining and modern big data science. Scientific analysis of big data requires a working knowledge of machine learning, which forms predictions based on known properties learned from training data. *Machine Learning* is an accessible, comprehensive guide for the non-mathematician, providing clear guidance that allows readers to:

- Learn the languages of machine learning including Hadoop, Mahout, and Weka
- Understand decision trees, Bayesian networks, and artificial neural networks
- Implement Association Rule, Real Time, and Batch learning
- Develop a strategic plan for safe, effective, and efficient machine learning

By learning to construct a system that can learn from data, readers can increase their utility across industries. Machine learning sits at the core of deep dive data analysis and visualization, which is increasingly in demand as companies discover the goldmine hiding in their existing data. For the tech professional involved in data science, *Machine Learning: Hands-On for Developers and Technical Professionals* provides the skills and techniques required to dig deeper.

## About the Author

**Jason Bell** manages a number of large scale projects for SportsFusion, a UK company that brings information technology to the professional sports industry. He has worked in software development since 1996 and has been active within the computing and supply chain field since 1990. Jason currently works with technologies such as Java, RabbitMQ and Hadoop but he has also worked with Apache Mahout machine learning APIs for customer analysis and recommendations. Jason is also an adjunct professor at the University of Ulster in the UK teaching Python programming. His previous written work includes section editor (J2SE) for Java Developers Journal and articles for IBM DeveloperWorks.

### Machine Learning for iOS Developers

## Machine Learning for iOS Developers

Abhishek Mishra

ISBN: 978-1-119-60287-3 • Mar 2020 • TBAApp

**Harness the power of Apple iOS machine learning (ML) capabilities and learn the concepts and techniques necessary to be a successful Apple iOS machine learning practitioner!**

Machine learning (ML) is the science of getting computers to act without being explicitly programmed. A branch of Artificial Intelligence (AI), machine learning techniques offer ways to identify trends, forecast behavior, and make recommendations. The Apple iOS Software Development Kit (SDK) allows developers to integrate ML services, such as speech recognition and language translation, into mobile devices, most of which can be used in multi-cloud settings. Focusing on Apple's ML services, *Machine Learning for iOS Developers* is an up-to-date introduction to the field, instructing readers to implement machine learning in iOS applications.

Assuming no prior experience with machine learning, this reader-friendly guide offers expert instruction and practical examples of ML integration in iOS. Organized into two sections, the book's clearly-written chapters first cover fundamental ML concepts, the different types of ML systems, their practical uses, and the potential challenges of ML solutions. The second section teaches readers to use models—both pre-trained and user-built—with Apple's CoreML framework. Source code examples are provided for readers to download and use in their own projects. This book helps readers:

- Understand the theoretical concepts and practical applications of machine learning used in predictive data analytics
- Build, deploy, and maintain ML systems for tasks such as model validation, optimization, scalability, and real-time streaming
- Develop skills in data acquisition and modeling, classification, and regression.
- Compare traditional vs. ML approaches, and machine learning on handsets vs. machine learning as a service (MLaaS)
- Implement decision tree based models, an instance-based machine learning system, and integrate Scikit-learn & Keras models with CoreML

*Machine Learning for iOS Developers* is a must-have resource software engineers and mobile solutions architects wishing to learn ML concepts and implement machine learning on iOS Apps.

### Teach Yourself VISUALLY iPhone 11, 11Pro, and 11 Pro Max

## Teach Yourself VISUALLY iPhone 11, 11Pro, and 11 Pro Max

Guy Hart-Davis

**Series:** Teach Yourself VISUALLY (Tech) • **ISBN:** 978-1-119-68388-9 • Mar 2020 • TBAApp •

**Previous Edition:** 978-1-119-43961-5

**Know your new iPhone 11, 11 Pro, and 11 Pro Max from the inside-out with 900 color screen shots!**

*Teach Yourself VISUALLY iPhone* is your ultimate guide to getting the most out of your iPhone! Apple's graphics-driven iOS is perfect for visual learners, so this book uses a visual approach to show you everything you need to know to get up and running—and much more. Full-color screen shots walk you step-by-step through setup, customization, and everything your iPhone can do. Whether you are new to the iPhone or have just upgraded to the 11, 11 Pro, or 11 Pro Max, this book helps you discover your phone's full functionality and newest capabilities. Stay in touch by phone, text, email, FaceTime Audio or FaceTime Video calls, or social media; download and enjoy books, music, movies, and more; take, edit, and manage photos; track your health, fitness, and habits; organize your schedule, your contacts, and your commitments; and much more!

The iPhone is designed to be user-friendly, attractive, and functional. But it is capable of so much more than you think—don't you want to explore the possibilities? This book walks you through iOS 13 visually to help you stay in touch, get things done, and have some fun while you're at it!

- Get to know iOS 13 with 900 full-color screen shots
- Master the iPhone's basic functions and learn the latest features
- Customize your iPhone to suit your needs and get optimal performance
- Find the apps and services that can make your life easier

The iPhone you hold in your hand represents the pinnacle of mobile technology and is a masterpiece of industrial design. Once you get to know it, you'll never be without it. *Teach Yourself VISUALLY iPhone* is your personal map for exploring your new tech companion.

Guy Hart-Davis (Barnard Castle, UK) is the author of more than 100 computing books, including *Teach Yourself VISUALLY iPhone 7*, *Teach Yourself VISUALLY MacBook 3rd Edition*, and *Teach Yourself VISUALLY Android 2nd Edition*. He also writes about PCs, Windows, Linux, and VBA

**Teach Yourself  
VISUALLY  
MacBook Pro  
and MacBook  
Air, 5th Edition**

## Teach Yourself VISUALLY MacBook Pro and MacBook Air, 5th Edition

Guy Hart-Davis

**Series:** Teach Yourself VISUALLY (Tech) • **ISBN:** 978-1-119-68389-6 • Mar 2020 • TBA •  
**Previous Edition:** 978-1-119-46390-0

### The visual learner's ultimate guide to the MacBook Pro, MacBook Air and macOS Catalina

*Teach Yourself VISUALLY MacBook* is your ultimate guide to getting up and running quickly with your new MacBook Pro or MacBook Air! Whether you're new to computers or transitioning from a PC, this graphics-heavy guide will show you everything you need to know to get the most out of your new laptop. Clear, step-by-step instructions walk you through each task, with screenshots that help you follow along with confidence. You'll learn how to manage files, work with macOS software, organize photos and media, set up email, access the internet, and adjust settings and preferences to make your MacBook work the way *you* work. You'll also explore the features that bring computing to a whole new level, including iCloud, FaceTime, the App Store, and so much more!

The Mac has long inspired a legion of loyal fans, and you're about to find out why. From sleek design to intuitive interface, to an OS that just *works*, Apple has cornered the market on the high-end computing experience. The MacBook makes sublime computing portable, and this book shows you how to take advantage of all that your MacBook has to offer.

macOS Catalina gives you more of everything you love about Mac. Prepare yourself to experience music, TV, and podcasts in newly designed Mac apps. You can now enjoy your favorite iPad apps on Mac, and even extend your workspace and expand your creativity with iPad and Apple Pencil. Packed with new features and updates to the apps Apple users love, you can now take everything you do up the next level.

- Get acquainted with the latest macOS version Catalina, and its new features
- Perform everyday tasks quickly and easily
- Customize preferences and settings to suit your needs
- Download new apps, video chat, save to the cloud, and much more!

No confusing tech-speak, no vague instructions, and no complex tangents into obscure tasks. This friendly guide is packed with screenshots, easy-to-follow instructions, and a practical sensibility; you're not launching the space shuttle, you just want to open your email. If you're ready to explore all that your MacBook can do, *Teach Yourself VISUALLY MacBook* is your ideal companion.

## COMPUTER SCIENCE

**Cyber Breach  
Response That  
Actually Works**

### Cyber Breach Response That Actually Works Organizational Approach to Managing Residual Risk

Andrew Gorecki

**ISBN:** 978-1-119-67932-5 • Aug 2020 • TBA •

#### You will be breached—the only question is whether you'll be ready

A cyber breach could cost your organization millions of dollars—in 2019, the average cost of a cyber breach for companies was \$3.9M, a figure that is increasing 20-30% annually. But effective planning can lessen the impact and duration of an inevitable cyberattack. *Cyber Breach Response That Actually Works* provides a business-focused methodology that will allow you to address the aftermath of a cyber breach and reduce its impact to your enterprise.

This book goes beyond step-by-step instructions for technical staff, focusing on big-picture planning and strategy that makes the most business impact. Inside, you'll learn what drives cyber incident response and how to build an effective incident response capability. Expert author Andrew Gorecki delivers a vendor-agnostic approach based on his experience with Fortune 500 organizations.

- Understand the evolving threat landscape and learn how to address tactical and strategic challenges to build a comprehensive and cohesive cyber breach response program
- Discover how incident response fits within your overall information security program, including a look at risk management
- Build a capable incident response team and create an actionable incident response plan to prepare for cyberattacks and minimize their impact to your organization
- Effectively investigate small and large-scale incidents and recover faster by leveraging proven industry practices
- Navigate legal issues impacting incident response, including laws and regulations, criminal cases and civil litigation, and types of evidence and their admissibility in court

In addition to its valuable breadth of discussion on incident response from a business strategy perspective, *Cyber Breach Response That Actually Works* offers information on key technology considerations to aid you in building an effective capability and accelerating investigations to ensure your organization can continue business operations during significant cyber events.

## Cognitive Computer Vision

### Cognitive Computer Vision

Hiranmay Ghosh

ISBN: 978-1-119-52786-2 • Jul 2020 • 256pp

This book focuses on computing aspects and shows how the cognitive principles borrowed from other disciplines can be used to solve problems of computer vision. The book begins with an introduction to the problems of computer vision and why cognitive principles should be used to solve these problems. Then it moves on to a discussion of deductive, inductive, and abductive reasoning and the psychological observations and deductions of various theories and models of cognitive vision. Other topics covered include knowledge representation techniques, evolution of cognitive architectures, machine learning approaches, and more. The book ends with salient observations and future research directions.

## DATA MINING

### Reports, Dashboards and Apps Using Microsoft Power Platform

### Reports, Dashboards and Apps Using Microsoft Power Platform

Sivakumar Harinath

ISBN: 978-1-119-60918-6 • Mar 2020 • TBAApp

**Teaches Excel, Tableau, and Qlikview users how to get the most insight and analysis from Microsoft's Power Platform suite for data analysis and visualization**

Microsoft Power Platform enables users to visualize data and share insights throughout an entire organization. Able to connect to any source on-premises or in the cloud, this powerful business analytics solution is rated as a leader in Gartner's Business Intelligence Magic Quadrant—ranking ahead of Tableau and Qlik. *Reports, Dashboards and Apps Using Microsoft Power Platform* helps readers understand the Power Platform suite, adopt and adapt the products based on their business needs, and transform how their organizations gain insights about business process optimization.

Written by members of the Microsoft team that built Power Platform, this authoritative book instructs readers on the effective, hands-on use of these technologies. Excel users seeking to upgrade for better analysis and visualization and Tableau or Qlikview users looking to integrate with Power Platform more easily will find the information invaluable. This book enables readers to:

- Prepare data models and author reports
- Create dashboards
- Manage dashboards and at enterprise scale
- Use Power Apps to create actionable insights
- Automate processes using Microsoft Flow

*Reports, Dashboards and Apps Using Microsoft Power Platform* is an essential guide for Business Intelligence professionals, analysts, data scientists, developers, and Excel, Tableau, and Qlikview power users.

### Smarter Data Science

### Smarter Data Science

**Succeeding with Enterprise-Grade Data and AI Projects**

Neal Fishman & Cole Stryker

ISBN: 978-1-119-69341-3 • May 2020 • 350pp

**Organizations can make data science a repeatable, predictable tool, which business professionals use to get more value from their data**

Enterprise data and AI projects are often scattershot, underbaked, siloed, and not adaptable to predictable business changes. As a result, the vast majority fail. These expensive quagmires can be avoided, and this book explains precisely how.

Data science is emerging as a hands-on tool for not just data scientists, but business professionals as well. Managers, directors, IT leaders, and analysts must expand their use of data science capabilities for the organization to stay competitive. *Smarter Data Science* helps them achieve their enterprise-grade data projects and AI goals. It serves as a guide to building a robust and comprehensive information architecture program that enables sustainable and scalable AI deployments.

When they climb the ladder presented in this book, businesspeople and data scientists alike will be able to improve and foster repeatable capabilities. They will have the knowledge to maximize their AI and data assets for the benefit of their organizations.



### Effective SEO and Content Marketing

## Effective SEO and Content Marketing

### The Ultimate Guide for Maximizing Free Web Traffic

Nicolaos Papagiannis

ISBN: 978-1-119-62885-9 • Mar 2020 • 320pp

#### Get beyond the basics and see how modern-day users are reimagining the SEO process

SEO is often underutilized and overlooked across the marketing realm today. SEO is not merely trying to improve your website ranking on Google, but it can spark and optimize ideas. Above all it can help improve the amount of free traffic coming to your web properties. This book provides you with a comprehensive approach to make sure marketing spend is utilized as effectively as possible and deliver the best ROI for your brand and business.

Maximizing your organic (free) traffic channels should be a top priority and this book will provide you with insight on how to do that. From working with social media influencers to steering creative ideas and campaigns, modern day SEO requires a full-service perspective of marketing and its processes.

- General education on SEO and organic content marketing
- Understanding which search engines to focus on
- How SEO and content can solve business problems
- Building a new brand through SEO and content
- Identifying who your true competitors are
- Which Analytics reports you should be regularly monitoring
- How to establish research channels that can inform your business initiatives
- Building personas and audience purchase journeys
- Prioritizing locations, demographics and countries
- What needs to be in place to maximize free traffic levels to your brands assets
- Understanding all the key tasks and attributes for an effective content program
- Data-Driven Content: Detailed instruction on how to use data to inform content responses, ideas and asset types
- Understanding different content asset types from standard items like articles to highly advanced assets like films, podcasts, white papers and other assets
- Calculating ROI for SEO and Content initiatives
- Small business marketing via content and SEO and having the right small business mindset for success
- Website and content design considerations (accessibility, principles of marketing)
- Optimizing for the future and looking at other search venues
- Amazon Optimization
- YouTube Optimization
- App Store Optimization (ASO)
- Podcast Optimization
- Optimizing Blogs and other off-site content
- Prepping and optimizing for the newest technologies, including voice search, artificial intelligence, and content discovery vehicles
- How to build an optimization path and programs that drive results and manage risks

In addition to learning the most effective processes to structure your SEO, you will have access to bonus materials that accompany this book which will include worksheets, checklists, creative brief examples, quizzes, and best interview questions when hiring an SEO specialist. Modern-day marketers, business owners, and brand managers, this book is for you!

### Women of Color in IT

## Women of Color in IT

### A Blueprint for Inspiring and Mentoring the Next Generation of Technology Innovators

Susanne Tedrick

ISBN: 978-1-119-63348-8 • Apr 2020 • 312pp

#### Break through barriers to achieve a rewarding future in tech

*Women of Color in IT: A Blueprint for Inspiring and Mentoring the Next Generation of Technology Innovators* will help you overcome the obstacles that often prevent women of color from pursuing and staying in tech careers. Contrary to popular belief, tech careers are diverse and fun—and they go far beyond just coding. This book will show you that today's tech careers are incredibly dynamic, and you'll learn how your soft skills—communication, public speaking, networking—can help you succeed in tech.

This book will guide you through the process of cultivating strong relationships and building a network that will get you where you want to be. You'll learn to identify a strong, knowledgeable support network that you can rely on for guidance or mentorship. This step is crucial in getting young women of color into tech careers and keeping them there.

- Build your professional network to get the guidance you need
- Find a mentor who understands your goals and your struggles
- Overcome negativity and stay motivated through difficult times
- Identify and develop the soft skills that you need to get ahead in tech

Read this book to help bring to life your vision of a future in tech. With practical advice and inspiring stories, you'll develop the right tools *and* the right mindset. Whether you're just considering going into tech or you want to take your current career to the next level, *Women of Color in IT* will show you how to uncover the resources you need to succeed.



## Applied Incident Response

ISBN: 978-1-119-56026-5

Mar 2020 • 464pp

# Applied Incident Response

Steve Anson



Incident response is critical for the active defense of any network, and incident responders need up-to-date, immediately applicable techniques with which to engage the adversary. *Applied Incident Response* details effective ways to respond to advanced attacks against local and remote network resources, providing proven response techniques and a framework through which to apply them. As a starting point for new incident handlers, or as a technical reference for hardened IR veterans, this book details the latest techniques for responding to threats against your network, including:

- Preparing your environment for effective incident response
- Leveraging MITRE ATT&CK and threat intelligence for active network defense
- Local and remote triage of systems using PowerShell, WMIC, and open-source tools
- Acquiring RAM and disk images locally and remotely
- Analyzing RAM with Volatility and Rekall
- Deep-dive forensic analysis of system drives using open-source or commercial tools
- Leveraging Security Onion and Elastic Stack for network security monitoring
- Techniques for log analysis and aggregating high-value logs
- Static and dynamic analysis of malware with YARA rules, FLARE VM, and Cuckoo Sandbox
- Detecting and responding to lateral movement techniques, including pass-the-hash, pass-the-ticket, Kerberoasting, malicious use of PowerShell, and many more
- Effective threat hunting techniques
- Adversary emulation with Atomic Red Team
- Improving preventive and detective controls

## About the Author

**Steve Anson**, CISSP, EnCE, CCME, GIAC, GPEN, is a Director with Forward Defense, an IT security firm with a select clientele of government agencies and multinational companies with extreme IT security and digital investigation requirements. Steve has worked as a special agent with the US Department of Defense Criminal Investigation Service investigating computer crimes with national security implications. Steve has also worked as an instructor training hundreds of FBI agents in computer crime investigation, as an FBI task force agent, as an instructor for the US State Department training law enforcement in many other countries to help them establisher cyber investigation capabilities, and as an police officer founding and supervising the departments computer crimes investigations and forensics. Steve is a frequent speaker and trainer for SANS and other respected cybersecurity organizations.



## Hacking Multifactor Authentication

ISBN: 978-1-119-65079-9

May 2020 • TBAApp

# Hacking Multifactor Authentication

Roger A. Grimes

**Protect your organization from scandalously easy-to-hack MFA security “solutions”**

Multi-Factor Authentication (MFA) is spreading like wildfire across digital environments. However, hundreds of millions of dollars have been stolen from MFA-protected online accounts. How? Most people who use multifactor authentication (MFA) have been told that it is far less hackable than other types of authentication, or even that it is unhackable. You might be shocked to learn that all MFA solutions are actually *easy* to hack. That's right: there is no perfectly safe MFA solution. In fact, most can be hacked at least five different ways. *Hacking Multifactor Authentication* will show you how MFA works behind the scenes and how poorly linked multi-step authentication steps allows MFA to be hacked and compromised.

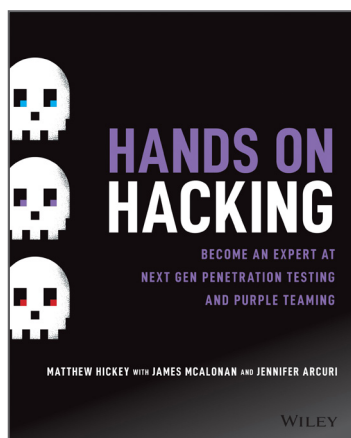
This book covers over two dozen ways that various MFA solutions can be hacked, including the methods (and defenses) common to all MFA solutions. You'll learn about the various types of MFA solutions, their strengths and weaknesses, and how to pick the best, most defensible MFA solution for your (or your customers') needs. Finally, this book reveals a simple method for quickly evaluating your existing MFA solutions. If using or developing a secure MFA solution is important to you, you need this book.

- Learn how different types of multifactor authentication work behind the scenes
- See how easy it is to hack MFA security solutions—no matter how secure they seem
- Identify the strengths and weaknesses in your (or your customers') existing MFA security and how to mitigate

Author Roger Grimes is an internationally known security expert whose work on hacking MFA has generated significant buzz in the security world. Read this book to learn what decisions and preparations your organization needs to take to prevent losses from MFA hacking.

## About the Author

**Roger A. Grimes** has worked in the field of computer security for over 30 years. As a professional penetration tester, he successfully broke into every company he was hired to hack within an hour, with a single exception that took three hours. He consults worldwide and has been the InfoWorld magazine ([www.infoworld.com](http://www.infoworld.com)) computer security columnist since 2005. As an evangelist for KnowBe4, Roger speaks at major security industry events worldwide including RSA, Blackhat, and TechMentor.



ISBN: 978-1-119-56145-3

Apr 2020 • 400pp

## Hands on Hacking

Matthew Hickey, James McAlonan & Jennifer Arcuri



### A fast, hands-on introduction to offensive hacking techniques

*Hands-On Hacking* teaches readers to see through the eyes of their adversary and apply hacking techniques to better understand real-world risks to computer networks and data. Readers will benefit from the author's years of experience in the field hacking into computer networks and ultimately training others in the art of cyber-attacks. This book holds no punches and explains the tools, tactics and procedures used by ethical hackers and criminal crackers alike. We will take you on a journey through a hacker's perspective when focused on the computer infrastructure of a target company, exploring how to access the servers and data. Once the information gathering stage is complete, you'll look for flaws and their known exploits—including tools developed by real-world government financed state-actors.

- An introduction to the same hacking techniques that malicious hackers will use against an organization
- Written by infosec experts with proven history of publishing vulnerabilities and highlighting security flaws
- Based on the tried and tested material used to train hackers all over the world in the art of breaching networks
- Covers the fundamental basics of how computer networks are inherently vulnerable to attack, teaching the student how to apply hacking skills to uncover vulnerabilities

We cover topics of breaching a company from the external network perimeter, hacking internal enterprise systems and web application vulnerabilities. Delving into the basics of exploitation with real-world practical examples, you won't find any hypothetical academic only attacks here. From start to finish this book will take the student through the steps necessary to breach an organization to improve its security.

Written by world-renowned cybersecurity experts and educators, *Hands-On Hacking* teaches entry-level professionals seeking to learn ethical hacking techniques. If you are looking to understand penetration testing and ethical hacking, this book takes you from basic methods to advanced techniques in a structured learning format.

### About the Authors

**Matthew Hickey** (Hacker House) is an expert in offensive security testing, discovering vulnerabilities used by malicious attackers, and develops bespoke exploits and security tools for customer engagements. Matthew has been cited by Wired, Forbes, Reuters, Business Insider as a cybersecurity expert for his work surrounding hacks on North Korea, WannaCry, and other major cybersecurity events.

**James McAlonan** (Hacker House) has been coding since Pascal was in style and works at HackerHouse developing cybersecurity training and testing.

**Jennifer Arcuri** is a Certified Ethical Hacker and the founder of Hacker House. The Innotech Summit she launched for cybersecurity professionals in London brought together experts in law enforcement and government from the Prime Minister's office, Metropolitan Police for the City of London, and the National Crimes Agency among others.

## Implementing Cryptography Using Python

ISBN: 978-1-119-61220-9

Jun 2020 • TBAApp

# Implementing Cryptography Using Python

Shannon Bray

Learn to deploy proven cryptographic tools in your applications and services

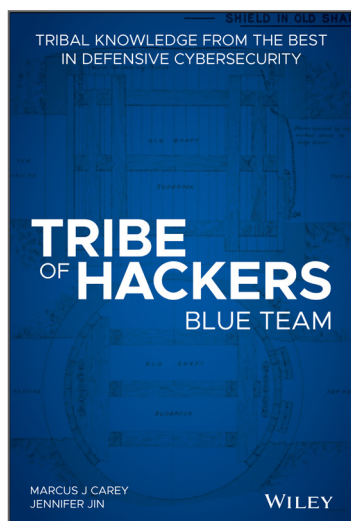
Cryptography is, quite simply, what makes security and privacy in the digital world possible. Tech professionals, including programmers, IT admins, and security analysts, need to understand how cryptography works to protect users, data, and assets. *Implementing Cryptography Using Python* will teach you the essentials, so you can apply proven cryptographic tools to secure your applications and systems. Because this book uses Python, an easily accessible language that has become one of the standards for cryptography implementation, you'll be able to quickly learn how to secure applications and data of all kinds.

In this easy-to-read guide, well-known cybersecurity expert Shannon Bray walks you through creating secure communications in public channels using public-key cryptography. You'll also explore methods of authenticating messages to ensure that they haven't been tampered with in transit. Finally, you'll learn how to use digital signatures to let others verify the messages sent through your services.

- Learn how to implement proven cryptographic tools, using easy-to-understand examples written in Python
- Discover the history of cryptography and understand its critical importance in today's digital communication systems
- Work through real-world examples to understand the pros and cons of various authentication methods
- Protect your end-users and ensure that your applications and systems are using up-to-date cryptography

### About the Author

**Shannon W. Bray** CASP, Security +, CISM is the Virtual CISO at Secured Systems providing clients guidance on establishing and maintaining information security plans, policies, procedures, standards, and guidelines using accepted frameworks. He has worked in this roles and others in corporations and federal agencies. Shannon has an MS in Cybersecurity from the University of Delaware. Prior to transitioning to cybersecurity, he was a well known IT expert with several successful books about Microsoft SharePoint.



**Series:** Tribe of Hackers

**ISBN:** 978-1-119-64341-8

Mar 2020 • TBAp

## Tribe of Hackers Blue Team

### Tribal Knowledge from the best in Defensive Cybersecurity

Marcus J. Carey & Jennifer Jin

#### Blue Team defensive advice from the biggest names in cybersecurity

The *Tribe of Hackers* team is back. This new guide is packed with insights on blue team issues from the biggest names in cybersecurity. Inside, dozens of the world's leading Blue Team security specialists show you how to harden systems against real and simulated breaches and attacks. You'll discover the latest strategies for blocking even the most advanced red-team attacks and preventing costly losses. The experts share their hard-earned wisdom, revealing what works and what doesn't in the real world of cybersecurity.

*Tribe of Hackers Blue Team* goes beyond the bestselling, original *Tribe of Hackers* book and delves into detail on defensive and preventative techniques. Learn how to grapple with the issues that hands-on security experts and security managers are sure to build into their blue team exercises.

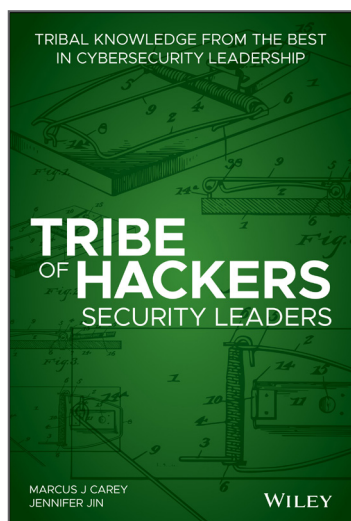
- Discover what it takes to get started building blue team skills
- Learn how you can defend against physical and technical penetration testing
- Understand the techniques that advanced red teamers use against high-value targets
- Identify the most important tools to master as a blue teamer
- Explore ways to harden systems against red team attacks
- Stand out from the competition as you work to advance your cybersecurity career

Authored by leaders in cybersecurity attack and breach simulations, the *Tribe of Hackers* series is perfect for those new to blue team security, experienced practitioners, and cybersecurity team leaders. *Tribe of Hackers Blue Team* has the real-world advice and practical guidance you need to advance your information security career and ready yourself for the blue team defense.

#### About the Authors

**Marcus J. Carey** is the founder and CEO of Threatcare, a leader in cybersecurity attack and breach simulations. He started his cybersecurity career in U.S. Navy cryptology with further service in the National Security Agency. He is the author of *Tribe of Hackers* (ISBN: 9781793464187).

**Jennifer Jin** is Head of Communications at Threatcare and the co-author of *Tribe of Hackers*.



**Series:** Tribe of Hackers

**ISBN:** 978-1-119-64377-7

Mar 2020 • TBAApp

# Tribe of Hackers Security Leaders

## Tribal Knowledge from the best in Cybersecurity Leadership



Marcus J. Carey & Jennifer Jin

### Tribal Knowledge from the Best in Cybersecurity Leadership

The *Tribe of Hackers* series continues, sharing what CISSPs, CISOs, and other security leaders need to know to build solid cybersecurity teams and keep organizations secure. Dozens of experts and influential security specialists reveal their best strategies for building, leading, and managing information security within organizations. *Tribe of Hackers Security Leaders* follows the same bestselling format as the original *Tribe of Hackers*, but with a detailed focus on how information security leaders impact organizational security.

Information security is becoming more important and more valuable all the time. Security breaches can be costly, even shutting businesses and governments down, so security leadership is a high-stakes game. Leading teams of hackers is not always easy, but the future of your organization may depend on it. In this book, the world's top security experts answer the questions that Chief Information Security Officers and other security leaders are asking, including:

- What's the most important decision you've made or action you've taken to enable a business risk?
- How do you lead your team to execute and get results?
- Do you have a workforce philosophy or unique approach to talent acquisition?
- Have you created a cohesive strategy for your information security program or business unit?

Anyone in or aspiring to an information security leadership role, whether at a team level or organization-wide, needs to read this book. *Tribe of Hackers Security Leaders* has the real-world advice and practical guidance you need to advance your cybersecurity leadership career.

### About the Authors

**Marcus J. Carey** is the founder and CEO of Threatcare, a leader in cybersecurity attack and breach simulations. He started his cybersecurity career in U.S. Navy cryptology with further service in the National Security Agency. He is the author of *Tribe of Hackers* (ISBN: 9781793464187).

**Jennifer Jin** is Head of Communications at Threatcare and the co-author of *Tribe of Hackers*.



**Applied Predictive Analytics, 2nd Edition**

## Applied Predictive Analytics, 2nd Edition

Principles and Techniques for the Professional Data Analyst

Dean Abbott

ISBN: 978-1-119-65390-5 • Jun 2020 • TBAApp • Previous Edition: 978-1-118-72796-6

### Learn the art and science of predictive analytics - the latest techniques

Predictive analytics is what translates big data into meaningful, usable business information. This guide examines the science of the underlying algorithms as well as the principles and best practices that govern the art of predictive analytics. It clearly explains the theory of analytics projects and offers tips and tricks for successful predictive modeling. Hands-on examples and case studies are included. *Applied Predictive Analytics, 2nd Edition* arms data and business analysts and business managers with the tools they need to interpret and capitalize on big data.

**From Chaos to Concept**

## From Chaos to Concept

A Team Oriented Approach to Designing World Class Products and Experiences

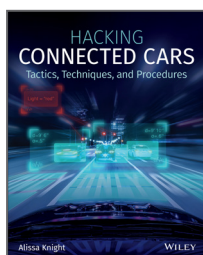
Kevin L. Braun

ISBN: 978-1-119-62896-5 • May 2020 • TBAApp

### A clear, comprehensive approach to meeting business goals by improving user experiences

This book delivers real-world UX processes that have been refined during 20+ years of experience working with companies of all sizes. This book is written for product design, software development, graphic design, and UX professionals with a focus on creating measurable better user experiences. *From Chaos to Concept: A Team Oriented Approach to Designing World Class Products and Experiences* provides a process for creating measurably better products. If you want to design solutions to meet business goals and delight your users, you can look to this resource which covers the following areas:

- Creating and documenting goals, strategies, objectives, and tactics
- Defining or refining personas based on your measurable objectives (OKRs)
- Creating and iterating on scenarios based your prioritized personas
- A team approach to defining the product and roadmap to address critical use cases
- Team based divergent ideation and solution exploration
- Team based convergent solution definition
- Wireframing potential solutions for rapid research and iteration
- Using quantitative and qualitative methods to understand usage and test with users
- Exploring approaches to taxonomy and information architecture
- Using psychology and human factors to drive your design decisions
- Developing performant, accessible, maintainable experiences
- Using analytics to measure the results and inform the next iteration
- How this process differs based on the size of the company or team that is employing it



## Hacking Connected Cars

Tactics, Techniques, and Procedures

Alissa Knight

ISBN: 978-1-119-49180-4 • Mar 2020 • TBAApp

Rights Already licensed in Korean, Simplified Chinese

### A field manual on contextualizing cyber threats, vulnerabilities, and risks to connected cars through penetration testing and risk assessment

*Hacking Connected Cars* deconstructs the tactics, techniques, and procedures (TTPs) used to hack into connected cars and autonomous vehicles to help you identify and mitigate vulnerabilities affecting cyber-physical vehicles. Written by a veteran of risk management and penetration testing of IoT devices and connected cars, this book provides a detailed account of how to perform penetration testing, threat modeling, and risk assessments of telematics control units and infotainment systems. This book demonstrates how vulnerabilities in wireless networking, Bluetooth, and GSM can be exploited to affect confidentiality, integrity, and availability of connected cars.

Passenger vehicles have experienced a massive increase in connectivity over the past five years, and the trend will only continue to grow with the expansion of The Internet of Things and increasing consumer demand for always-on connectivity. Manufacturers and OEMs need the ability to push updates without requiring service visits, but this leaves the vehicle's systems open to attack. This book examines the issues in depth, providing cutting-edge preventative tactics that security practitioners, researchers, and vendors can use to keep connected cars safe without sacrificing connectivity.

- Perform penetration testing of infotainment systems and telematics control units through a step-by-step methodical guide
- Analyze risk levels surrounding vulnerabilities and threats that impact confidentiality, integrity, and availability
- Conduct penetration testing using the same tactics, techniques, and procedures used by hackers

From relatively small features such as automatic parallel parking, to completely autonomous self-driving cars—all connected systems are vulnerable to attack. As connectivity becomes a way of life, the need for security expertise for in-vehicle systems is becoming increasingly urgent. *Hacking Connected Cars* provides practical, comprehensive guidance for keeping these vehicles secure.

## Mastering VMware NSX for vSphere

## Mastering VMware NSX for vSphere

Elver Sena

ISBN: 978-1-119-51354-4 • May 2020 • TBAApp

### A clear, comprehensive guide to VMware's latest virtualization solution

*Mastering VMware NSX for vSphere* is the ultimate guide to VMware's network security virtualization platform. Written by a rock star in the VMware community, this book offers invaluable guidance and crucial reference for every facet of NSX, with clear explanations that go far beyond the public documentation. Coverage includes NSX architecture, controllers, and edges; preparation and deployment; logical switches; VLANs and VXLANs; logical routers; virtualization; edge network services; firewall security; and much more to help you take full advantage of the platform's many features.

More and more organizations are recognizing both the need for stronger network security and the powerful solution that is NSX; usage has doubled in the past year alone, and that trend is projected to grow—and these organizations need qualified professionals who know how to work effectively with the NSX platform. This book covers everything you need to know to exploit the platform's full functionality so you can:

- Step up security at the application level
- Automate security and networking services
- Streamline infrastructure for better continuity
- Improve compliance by isolating systems that handle sensitive data

VMware's NSX provides advanced security tools at a lower cost than traditional networking. As server virtualization has already become a de facto standard in many circles, network virtualization will follow quickly—and NSX positions VMware in the lead the way vSphere won the servers. NSX allows you to boost security at a granular level, streamline compliance, and build a more robust defense against the sort of problems that make headlines. *Mastering VMware NSX for vSphere* helps you get up to speed quickly and put this powerful platform to work for your organization.

## You CAN Stop Stupid

## You CAN Stop Stupid

### Stopping Losses from Accidental and Malicious Actions

Ira Winkler & Dr. Tracy Celaya Brown

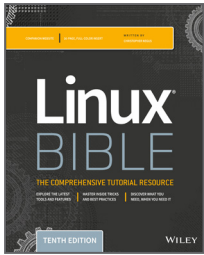
ISBN: 978-1-119-62198-0 • Jun 2020 • TBAApp

### Stopping Losses from Accidental and Malicious Actions

Around the world, users cost organizations billions of dollars due to simple errors and malicious actions. They believe that there is some deficiency in the users. In response, organizations believe that they have to improve their awareness efforts and making more secure users. This is like saying that coalmines should get healthier canaries. The reality is that it takes a multilayered approach that acknowledges that users will inevitably make mistakes or have malicious intent, and the failure is in not planning for that. It takes a holistic approach to assessing risk combined with technical defenses and countermeasures layered with a security culture and continuous improvement. Only with this kind of defense in depth can organizations hope to prevent the worst of the cybersecurity breaches and other user-initiated losses. Using lessons from tested and proven disciplines like military kill-chain analysis, counterterrorism analysis, industrial safety programs, and more, Ira Winkler and Dr. Tracy Celaya's *You CAN Stop Stupid* provides a methodology to analyze potential losses and determine appropriate countermeasures to implement.

- Minimize business losses associated with user failings
- Proactively plan to prevent and mitigate data breaches
- Optimize your security spending
- Cost justify your security and loss reduction efforts
- Improve your organization's culture

Business technology and security professionals will benefit from the information provided by these two well-known and influential cybersecurity speakers and experts.



## Linux Bible, 10th Edition

Christopher Negus

**Series:** Bible • **ISBN:** 978-1-119-57888-8 • Apr 2020 • TBA • **Previous Edition:** 978-1-118-99987-5

**Rights Already licensed in Russian**

**Previous Editions Licensed in Korean, Simplified Chinese**

### The industry favorite Linux guide

*Linux Bible, 10th Edition* is the ultimate hands-on Linux user guide, whether you're a true beginner or a more advanced user navigating recent changes. This updated tenth edition covers the latest versions of Red Hat Enterprise Linux 7 (RHEL 8), Fedora 30, and Ubuntu 18.10 LTS, and includes new information on cloud computing and development with guidance on Openstack and Cloudforms. With a focus on RHEL 8, this practical guide gets you up to speed quickly on the new enhancements for enterprise-quality file systems, the new boot process and services management, firewall, and the GNOME 3 desktop. Written by a Red Hat expert, this book provides the clear explanations and step-by-step instructions that demystify Linux and bring the new features seamlessly into your workflow.

This useful guide assumes a base of little or no Linux knowledge, and takes you step by step through what you need to know to get the job done.

- Get Linux up and running quickly
- Master basic operations and tackle more advanced tasks
- Get up to date on the recent changes to Linux server system management
- Bring Linux to the cloud using Openstack and Cloudforms
- Simplified Linux administration through the Cockpit Web Interface
- Automated Linux Deployment with Ansible
- Learn to navigate Linux with Amazon (AWS), Google (GCE), and Microsoft Azure Cloud services

*Linux Bible, 10th Edition* is the one resource you need, and provides the hands-on training that gets you on track in a flash.

## PowerShell 7 for IT Pros

## PowerShell 7 for IT Pros

Thomas Lee

**ISBN:** 978-1-119-64472-9 • Jun 2020 • TBA •

### Take advantage of everything Microsoft's new PowerShell 7 has to offer

*PowerShell 7 for IT Pros* is your guide to using PowerShell 7, the open source, cross-platform version of Windows PowerShell. Windows IT professionals can begin setting up automation in PowerShell 7, which features many improvements over the early version of PowerShell Core and Windows PowerShell. PowerShell 7 users can enjoy the high level of compatibility with the Windows PowerShell modules they rely on today. This book shows IT professionals—especially Windows administrators and developers—how to use PowerShell 7 to engage in their most important tasks, such as managing networking, using AD/DNS/DHCP, leveraging Azure, and more.

To make it easy to learn everything PowerShell 7 has to offer, this book includes robust examples, each containing sample code so readers can follow along. Scripts are based on PowerShell 7 running on Windows 10 19H1 or later and Windows Server 2019.

- Learn to navigate the PowerShell 7 administrative environment
- Use PowerShell 7 to automate networking, Active Directory, Windows storage, shared data, and more
- Run Windows Update, IIS, Hyper-V, and WMI and CIM cmdlets within PowerShell 7
- Understand how to handle reporting in the new PowerShell 7 environment

*PowerShell 7 for IT Pros* provides exclusive coverage of using PowerShell with both cloud-based systems and virtualized environments (Hyper V and Azure). Written by PowerShell veteran Thomas Lee, this is the only book you'll need to get started with PowerShell 7.

## Bite-Size Python

ISBN: 978-1-119-64381-4

Aug 2020 • TBAApp

# Bite-Size Python

## An Introduction to Python Programming

April Speight



Introduce children to the popular Python programming language through relatable examples and fun projects!

Python has now surpassed Java as the most commonly used programming language. As the language rises in popularity, this complete guide can teach basic Python concepts to kids with its simple, friendly format. *Bite-Size Python: An Introduction to Python Programming* provides children with a foundation in the Python language. This unique book shares knowledge through easy-to-understand examples, fast exercises, and fun projects!

As children learn, their parents, caregivers, and instructors can also join in their discoveries. *Bite-Size Python* is ideal for those who are new to programming, giving kids ages 9 and up a beginners' approach to learning one of the most important programming languages.

- Gives an overview of Python
- Provides exciting programming projects
- Offers instruction on how to download and install Python
- Presents key programming language concepts
- Simplifies technical definitions

With this playful guide to learning Python, readers can try out activities on their computers for a hands-on learning experience. The artwork in *Bite-Size Python* represents children of various backgrounds, so any child who picks up this book will be empowered to learn. And young readers will love showing their projects to friends and family!

### About the Author

**April Speight** is a Python developer based in Los Angeles, CA. Her dedication to the developer community and empathy for new developers has led her to create easy-to-follow content for learning Python and other technical concepts. Shes gained popularity in teaching others by providing instruction thats simple and relatable to the everyday non-technical coder. Her introductory content assumes no knowledge and breaks down technical concepts to their simplest level. Throughout her career in technology, April served as a software trainer for non-technical audiences and has since transitioned that experience into helping those who are new to programming learn and understand foundational concepts. In 2018, she founded Vogue & Code: <https://www.youtube.com/watch?v=sZoryDOSAvY>

## Practical Machine Learning in R

ISBN: 978-1-119-59151-1

Apr 2020 • TBAApp

# Practical Machine Learning in R

Fred Nwanganga & Mike Chapple



**Guides professionals and students through the rapidly growing field of machine learning with hands-on examples in the popular R programming language**

Machine learning—a branch of Artificial Intelligence (AI) which enables computers to improve their results and learn new approaches without explicit instructions—allows organizations to reveal patterns in their data and incorporate predictive analytics into their decision-making process. *Practical Machine Learning in R* provides a hands-on approach to solving business problems with intelligent, self-learning computer algorithms.

Bestselling author and data analytics experts Fred Nwanganga and Mike Chapple explain what machine learning is, demonstrate its organizational benefits, and provide hands-on examples created in the R programming language. A perfect guide for professional self-taught learners or students in an introductory machine learning course, this reader-friendly book illustrates the numerous real-world business uses of machine learning approaches. Clear and detailed chapters cover data wrangling, R programming with the popular RStudio tool, classification and regression techniques, performance evaluation, and more.

- Explores data management techniques, including data collection, exploration and dimensionality reduction
- Covers unsupervised learning, where readers identify and summarize patterns using approaches such as apriori, eclat and clustering
- Describes the principles behind the Nearest Neighbor, Decision Tree and Naive Bayes classification techniques
- Explains how to evaluate and choose the right model, as well as how to improve model performance using ensemble methods such as Random Forest and XGBoost

*Practical Machine Learning in R* is a must-have guide for business analysts, data scientists, and other professionals interested in leveraging the power of AI to solve business problems, as well as students and independent learners seeking to enter the field.

## About the Authors

**Fred Nwanganga** (Notre Dame) is a technology professional and teaching professor of business analytics in the Mendoza College of Business at the University of Notre Dame. He teaches undergraduate and graduate courses in Data Management, Machine Learning, and Unstructured Data Analysis. He has served in multiple roles as a software engineer, business analyst, and IT leader in the public and private sector. Fred holds BS and MS degrees in CS from Andrews University, an MBA from Indiana University, and is completing his PhD in Computer Science and engineering at Notre Dame.

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## Hands-On NoSQL

### Hands-On NoSQL

#### A Practical Guide to Design and Implementation with Technical Case Studies

Arsames Qajar & Dan Sullivan

ISBN: 978-1-119-65739-2 • Jun 2020 • TBAApp

#### Learn advanced design patterns and support NoSQL databases

If you're a database designer or software engineer who uses NoSQL, this book can help you expand your knowledge. Learn advanced design patterns, grasp the performance implications of design choices, and prepare to support large-scale NoSQL databases in production. *Hands-On NoSQL: A Practical Guide to Design and Implementation with Technical Case Studies* provides detailed descriptions of design patterns and discusses why certain patterns are chosen. Design choices are discussed in reference to their limitations as well as their effects on implemented features. Case studies in the book highlight NoSQL databases, demonstrate how they're used, and address the challenges of operating them in production environments.

You'll find unique insights and examples within *Hands-On NoSQL*. The authors focus on three NoSQL data models, looking at when to use each database type, each model's design advantages and disadvantages, and what design patterns to utilize in each model.

- See descriptions of NoSQL database models
- Read about design patterns used by experienced data modelers and architects
- Gain practical advice on choosing a NoSQL system type
- Get guidance on code implementations and queries
- View examples of how to interact with the database

*Hands-On NoSQL* also offers in-depth examinations of specialized forms of NoSQL querying and filtering. It is suitable for undergraduate and graduate courses in advanced database design. Get practical, applicable advice and expand your ability to support NoSQL databases with this educational guide.

## Your Software Smells Great!

### Your Software Smells Great!

#### Making an Impact with Beautiful Software

Shawn Livermore

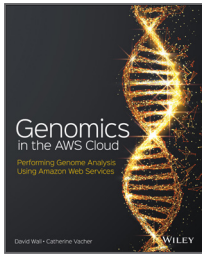
ISBN: 978-1-119-61887-4 • Aug 2020 • TBAApp

The step-by-step process for companies large and small to create aesthetically beautiful software. This book is written for software developers, information technology department leaders, business executives, and graphic designers who seek to improve aesthetic outcomes within software development projects. The arguments, logic, principles, techniques, and examples provided in this book have helped save companies countless millions, improved the morale of their development teams, and increased their delivery potential of information technology solutions overall. *Your Software Smells Great!* covers:

- Seeing is Believing
- How to Defeat Bureaucracy
- The pleasure of creating, using, and maintaining beautiful software
- How beautiful software saves everyone time
- The ROI
- How to create beautiful software from analysis to sketching to 2d and 3d aesthetics
- Delighting users

In addition to the practical advice *Your Software Smells Great!* includes powerful case studies from well-known innovative companies that delight their users with a beautiful experience





## Genomics in the AWS Cloud

### Performing Genome Analysis Using Amazon Web Services

David Wall & Catherine Vacher

ISBN: 978-1-119-57337-1 • Jun 2020 • 360pp

#### Perform genome analysis and sequencing of data with Amazon Web Services

*Genomics in the AWS Cloud: Analyzing Genetic Code Using Amazon Web Services* enables a person who has moderate familiarity with AWS Cloud to perform full genome analysis and research. Using the information in this book, you'll be able to take a FASTQ file containing raw data from a lab or a BAM file from a service provider and perform genome analysis on it. You'll also be able to identify potentially pathogenic gene sequences.

- Get an introduction to Whole Genome Sequencing (WGS)
- Make sense of WGS on AWS
- Master AWS services for genome analysis

Some key advantages of using AWS for genomic analysis is to help researchers utilize a wide choice of compute services that can process diverse datasets in analysis pipelines. Genomic sequencers that generate raw data files are located in labs on premises and AWS provides solutions to make it easy for customers to transfer these files to AWS reliably and securely. Storing Genomics and Medical (e.g., imaging) data at different stages requires enormous storage in a cost-effective manner. Amazon Simple Storage Service (Amazon S3), Amazon Glacier, and Amazon Elastic Block Store (Amazon EBS) provide the necessary solutions to securely store, manage, and scale genomic file storage. Moreover, the storage services can interface with various compute services from AWS to process these files.

Whether you're just getting started or have already been analyzing genomics data using the AWS Cloud, this book provides you with the information you need in order to use AWS services and features in the ways that will make the most sense for your genomic research.

## WEBSITE DEVELOPMENT



## PHP & MySQL

### Server-side Web Development

Jon Duckett

ISBN: 978-1-119-14921-7 • Mar 2020 • 672pp

Learn PHP, the programming language used to build sites like Facebook, Wikipedia and WordPress, then discover how these sites store information in a database (MySQL) and use the database to create the web pages.

This full-color book is packed with inspiring code examples, infographics and photography that not only teach you the PHP language and how to work with databases, but also show you how to build new applications from scratch. It demonstrates practical techniques that you will recognize from popular sites where visitors can:

- Register as a member and log in
- Create articles, posts and profiles that are saved in a database
- Upload their own images and files
- Automatically receive email notifications
- Like and comment on posts.

To show you how to apply the skills you learn, you will build a complete content management system, enhanced with features that are commonly seen on social networks.

Written by best-selling HTML & CSS and JavaScript & jQuery author Jon Duckett, this book uses a unique visual approach, with step-by-step instructions, practical code examples and pro tips that will teach you how to build modern database-driven websites using PHP.

**Professional  
WordPress  
Plugin  
Development,  
2nd Edition**

## Professional WordPress Plugin Development, 2nd Edition

Brad Williams, Justin Tadlock & John James Jacoby

ISBN: 978-1-119-66694-3 • Aug 2020 • TBAApp • Previous Edition: 978-0-470-91622-3

**Previous Editions Licensed in Korean**

**Extend WordPress with plugins using this advanced WordPress development book, updated for the current version**

This significantly updated edition of *Professional WordPress Plugin Development* addresses modern plugin development for WordPress, the highly popular content management system (CMS). If you're using WordPress to create and manage websites, WordPress plugins are the software that can extend or enhance CMS functionality. This book offers guidance on writing plugins for WordPress sites to share or sell to other users.

The second edition of *Professional WordPress Plugin Development* covers the building of advanced plugin development scenarios. It discusses the plugin framework and coding standards as well as dashboards, settings, menus, and related application programming interfaces (APIs). Additional topics include security, performance, data validation, and SQL statements.

- Learn about the power of hooks in WordPress
- Discover how JavaScript and Ajax will work in your site
- Understand key technologies: Block Editor/Gutenberg, JS/React, PHP, and the REST API
- Create and use custom post types and taxonomies.
- Creating custom dashboard menus and plugin settings
- Work with users and user data
- Schedule tasks and utilizing Cron
- Performance and security considerations

Written by experienced plugin developers, *Professional WordPress Plugin Development* also helps you internationalize and localize your WordPress website. Find out about debugging systems and optimizing your site for speed. As WordPress use continues to increase, you can elevate your professional knowledge of how to extend WordPress through plugins.



## JavaScript The New Toys

T. J. Crowder

ISBN: 978-1-119-36795-6 • Mar 2020 • TBAApp

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**All of JavaScript's newest features, in depth, made easy to understand.**

JavaScript is a rapidly changing language and it can be challenging to keep up with all the new toys being added. *JavaScript: The New Toys* explores the newest features of the world's most popular programming language while also showing readers how to track what's coming next. After setting the stage by covering who manages the process of improving JavaScript, how new features get introduced, terminology, and a high-level overview of new features, it details each new or updated item in depth, with example uses, possible pitfalls, and expert recommendations for updating old habits in light of new features. JavaScript: The New Toys:

- Covers all the additions to JavaScript in ES2015-ES2019 plus a preview of ES2020 (and beyond)
- Explores the latest syntax: nullish coalescing, optional chaining, let and const, class syntax, private methods, private fields, new.target, numeric separators, BigInt, destructuring, default parameters, arrow functions, async functions, await, generator functions, ... (rest and spread), template literals, binary and octal literals, \*\* (exponentiation), computed property/method names, for-of, for-await-of, shorthand properties, and others
- Details the new features and patterns including modules, promises, iteration, generators, Symbol, Proxy, reflection, typed arrays, Atomics, shared memory, WeakMap, WeakSet, and more
- Highlights common pitfalls and explains how to avoid them
- Shows how to follow the improvements process and even participate in the process yourself
- Explains how to use new features even before they're widely supported

With its comprehensive coverage and friendly, accessible style, *JavaScript: The New Toys* provides an invaluable resource for programmers everywhere, whether they work in web development, Node.js, Electron, Windows Universal Apps, or another JavaScript environment.



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