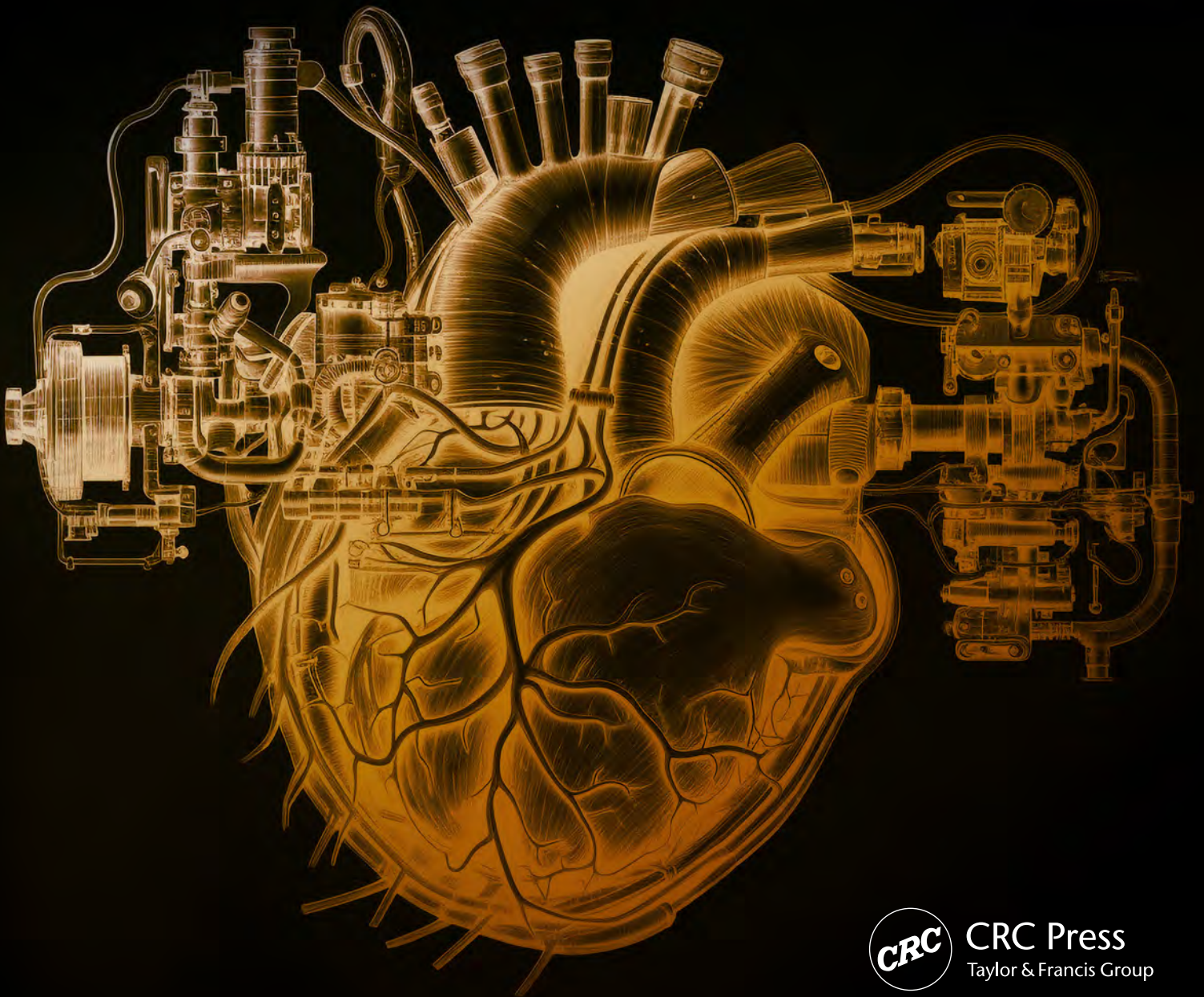


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We are a publisher that serves communities and readers across a broad spectrum of subjects and levels. The bulk of our publishing is meant for researchers, professionals, and students through references, textbooks, and practical professional titles. What is perhaps less known is that we also work hard to bring accessible knowledge to the general reader. While that may not always mean the layperson, it does include large audiences of informed readers who are not necessarily experts or learners in a particular subject.

Take, for example, *A Meteorite Killed My Cow*. Written for anyone who has an interest in astronomy, the author introduces the reader to the fascinating and sometimes bizarre world of space rocks using simple language. The AI titles included in the catalogue seek to present the uses of artificial intelligence in specific areas and they are meant for non-experts. *Thinking about Medicine* introduces the philosophy of healthcare to everyone involved in it. And, *Empowering Women in STEM* is a powerful look at myriad stories and perspectives to help women consider careers in science, technology, engineering, and mathematics with or without a background in these subjects.

We hope these books find large groups of interested readers throughout the world and we thank you for making that possible.

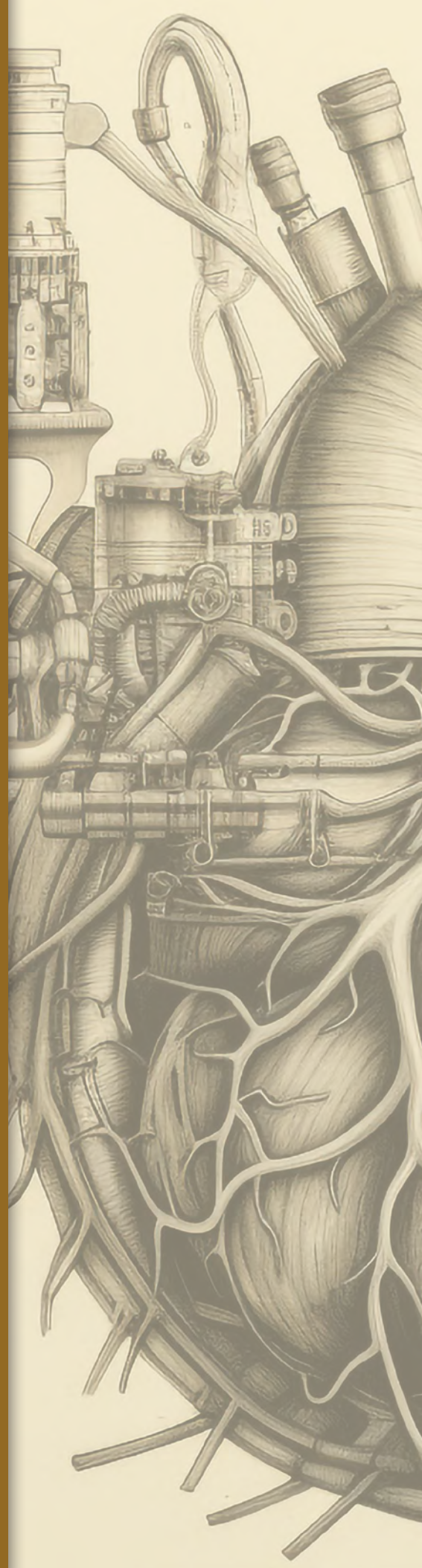


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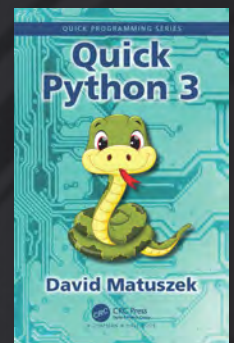


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David L. Matuszek

David L. Matuszek was Director of the Master's in Computer and Information Technology course at the University of Pennsylvania, USA (2001-2017). With 40 years' teaching experience, and 45 years' programming experience, David is skilled in both the design of innovative software systems and in teaching others how to master programming languages in an accessible and engaging way.

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Richard Greenwood

is a Senior Research Fellow at the Open University in Milton Keynes, UK. A geologist by training, he started studying meteorites quite by accident after answering an advert in a science magazine. Some of his close encounters with extraterrestrial samples are described in the book. In particular, he was the first scientist to identify the Winchcombe meteorite. But his meteorite exploits have not always been a total success. Failure to find a single meteorite on a Moroccan expedition in the early 1990s still hurts.

Richard's work at the Open University involves detailed analysis of a range of extraterrestrial materials, intending to understand the origin and early evolution of our Solar System. He is also the curator of the Open University's extensive meteorite collection. Richard has been a member of both the JAXA Hayabusa2 team studying samples returned from asteroid Ryugu and the NASA OSIRIS-REx team investigating material collected from Asteroid Bennu. He also maintains a popular outreach blog on meteorites: <https://meteoritestheblog.com>

Richard Greenwood

the author of *A Meteorite Killed My Cow*, explains our secret relationship with space rocks.

Science plays a vital role in our lives daily. However, it is a subject that is often obscured by impenetrable jargon and can seem opaque to the general reader. Meteorite science is a particular case in point. While most people may have a passing interest in comets, meteorites, and asteroids, these are objects that are far removed from their everyday experiences. Or at least that is the common perception. The truth is very different. Ordinary people encounter space rocks daily and are totally unaware of them.

Meteorites are generally harmless, with the notable exception of a dead cow in Venezuela and a large number of dinosaurs. They are arriving on Earth every day, everywhere, usually in the form of fine dust. The result is that meteorites can be collected from the rooftops of houses everywhere. The bigger bits turn up too. Most drop into the oceans, and that is about it. But regularly, meteorites fall on dry land, sometimes close to people. It can be a bruising encounter, as a lady in Alabama, unfortunately, discovered back in 1954.

A Meteorite Killed My Cow introduces the readers to the fascinating and sometimes bizarre world of meteorites. They are important objects that have consequences for their lives past, present, and future. I wrote it in an accessible, clear, layman-friendly style. I used a non-technical approach, so the book will be of interest to a wide and non-specialist readership. It emphasises the human side of meteorites and how ordinary people can and do encounter meteorites in a wide variety of settings.



A Meteorite Killed My Cow

Stuff That Happens When Space Rocks Hit Earth

Richard Greenwood

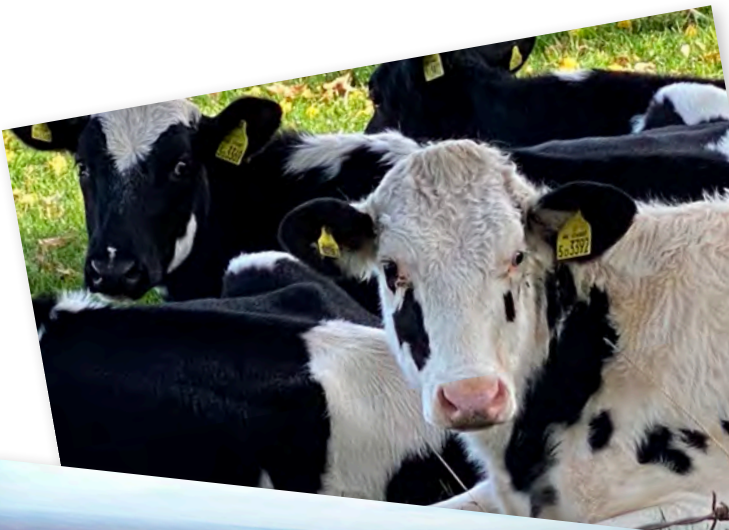
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March 11, 2024

256 Pages • 135 Color & 38 B/W Illustrations

Subject: General Science / Space Science

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The book is divided into sixteen chapters and there are also two appendices covering the more technical aspects of meteorite science. The book is linked to online webpages which provide additional information for the more technically interested reader. Chapter 1 looks in detail at the legend of **the Valera cow-killing meteorite**, from which the book takes its name. This incident is used as a pretext to discuss some general aspects of meteorite impacts. Chapter 2 recounts the true story of an **English pensioner who was nearly killed by a meteorite** as he worked in his garden. In Chapter 3 the reader is introduced to the fact that **meteorites fall everywhere**, in the form of fine dust, and that using the right techniques this material can be recovered and studied. The evidence that **the dinosaurs were wiped out by a giant meteorite** is examined in Chapter 4. There is an exotic side to meteorite science, and this is highlighted in chapter 5 by the tale of **the English spy who located a meteorite in the deserts of Saudi Arabia**. The importance of meteorites to the existence of humanity is discussed in Chapter 6. Meteorites often have exotic names, and one example is **a meteorite called Camel Donga**. Chapter 7 starts by examining how meteorites are named and then takes the reader on a journey to **Asteroid 4 Vesta, the second-largest object in the asteroid belt**. Chapter 8 recounts **a meteorite mystery from the deserts of**

North Africa and Chapter 9 looks at **what happens when meteorites smash into the Earth** at very high velocity. We are back to the picturesque English countryside in Chapter 10, with **the fall of the Winchcombe meteorite in 2021**. In life, some years are more important than others. Chapter 11 looks at 1969, which turned out to be a very eventful year for the study of meteorites. **The frozen wastes of Antarctica** are the most important place on Earth for finding meteorites. Chapter 12 looks at how these frozen samples were first discovered and why they are so important to science. As discussed in Chapter 13, **hot desert regions are increasingly fruitful places to hunt for meteorites**. Waiting for meteorites to crash land on Earth can be a bit of a frustrating business. Chapter 14 looks at recent missions that have collected samples directly from asteroids. The extraordinary story of how scientists began to realise that we have **meteorites from Mars** is the subject of Chapter 15. Finally, as discussed in Chapter 16, meteorites contain tiny **grains that predate our Solar System**.

A Meteorite Killed My Cow is a space book like no other. It is lavishly illustrated with an extensive number of colour photos and diagrams that will help to bring the subject alive for a wide readership.



Sandra K. Johnson

26-year career at IBM included roles as Chief Technology Officer, Research Staff Member, WebSphere Database Development Manager, and Linux Performance Architect and Manager. Dr. Johnson was a member of the IBM Academy of Technology, an IBM Master Inventor with more than 45 pending and issued patents, author of over 80 technical publications and books, and a Fellow of the Institute of Electrical and Electronics Engineers. She is the first African American woman to earn a Ph.D. in electrical and computer engineering.

IN CONVERSATION WITH

Sandra Johnson

the author of *Soft Power for the Journey* and the first African American woman to earn a Ph.D. in Electrical and Computer Engineering in the United States

What inspired you to write your memoir?

Several years ago, I had a conversation with a friend who emphatically said to me that I was special and unique. She mentioned there are few people in the world who look like me and do what I do. Stop trying to blend in and be like the rest of us. You need to stand out and be visible, to inspire and encourage others to pursue STEM careers.

Sometime later I was listening to a radio discussion about how to get more young people into STEM. The panelists expressed frustration with so many focusing on an unlikely career in professional sports. They asserted that aspiring to a STEM career is more viable and would lead to a comfortable and desirable lifestyle, and an opportunity to make a positive contribution to our global society.

I internalized these discussions and a few years later started writing about significant events in my life. This led to the writing and completion of my memoir a few decades later. I want to inspire people to pursue STEM careers. I also want to encourage all who face obstacles and challenges to find their inner strength to keep moving forward.

What the title of your book, *Soft Power for the Journey*, means?

Soft Power is drive, inner strength, perseverance, boldness, confidence, determination, and strong faith. I have leveraged this soft power in my life's journey.

You were the first African American woman to earn a Ph.D. in Electrical and Computer Engineering in the United States. How did this impact your career?

I was unaware of being the first when I was in graduate school for the first few years of my career. I just knew there were no African American women in my discipline in school, and certainly at my level at IBM Research. I was aware of only one who earned her Ph.D. two years after me. She became a university professor.

I had adjusted to being the only one and focused on the work. My professional interests and passions were in line with those of my colleagues. In this regard, I felt right at home and actively contributed substance, as a team member, on many impactful projects. From time to time, I encountered issues. However, I was able to work through them with the assistance of mentors and sponsors



Soft Power for the Journey

The Life of a STEM Trailblazer

Sandra Johnson

May 17, 2024

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344 Pages

Subject: Memoir / Science

www.routledge.com/9781032724256



who were in positions of power and influence. While there were a few times when I was slow in getting the recognition, etc. for my work, I never felt as though my career was derailed.

You had some challenging experiences in graduate school and navigating corporate America. How did those experiences affect the trajectory of your career?

I used soft power, along with invaluable assistance, advice, and words of wisdom from mentors, sponsors, and friends, in most instances, to address these challenges. As a result, I learned how to navigate academia and corporate America, and became stronger and wiser. It was this combination that affected my career trajectory.

For example, it was the disappointment of a promotion that I believe I earned that was the catalyst for me to take some time to focus on who I am and why am I here on earth. That led me to find my true purpose and destiny, and it was not what I originally thought. So that event accelerated the discovery of my true purpose. I believe I would have eventually got here, but it was the obstacle that accelerated the trajectory. I am happy to be someone who is living on purpose. It makes life more fulfilling.

What advice would you give to young women who plan for a career in STEM?

If you have a passion for this, and you know this is something you were born to do, then pursue it with every ounce of your being. Surround yourself with supporters. They may be family, friends,

sponsors, mentors, and coaches. Some of them may not be able to help you technically but do not underestimate the power of positive, moral support. Do not allow the uninformed and unenlightened to tell you that you do not belong. They are merely sharing with you their unsolicited opinion. You are the captain of your ship. You steer it in the right direction, and you will have a long, impactful, and rewarding career. All the best to you!

Endorsement

“For anyone who harbors self-doubt possibly triggered by “imposter syndrome” or by being a “first and only” (what some describe as “Jackie Robinson syndrome”), the proposed book can be directly and compassionately relatable and helpful to them. For anyone from the broader community and readership who may wish to understand better and more intimately what persons who experience either or both of the two aforementioned syndromes might at times face and have to deal with in their lives and careers, the proposed book can effectively speak directly and informatively to them as well. And for all who aspire to attain success at the highest levels to fulfil their innate potential for accomplishment and achievement, no matter their past or current economic and/or social status, this book can motivate and be a north star for them in striving for and reaching their goals.”

– Timothy M. Pinkston, Ph.D.,
Professor and Vice Dean, USC Viterbi School of Engineering,
University of Southern California



Dr. Kirk Shepard

is a co-founder of MAPS and a board-certified medical oncologist and hematologist physician with more than 50 medical publications in journals and books.



Dr. Charlotte Kremer

is a Chief Medical Officer of MAPS and is formerly Executive Vice President and Head of Medical Affairs for Astellas.



Garth Sundem

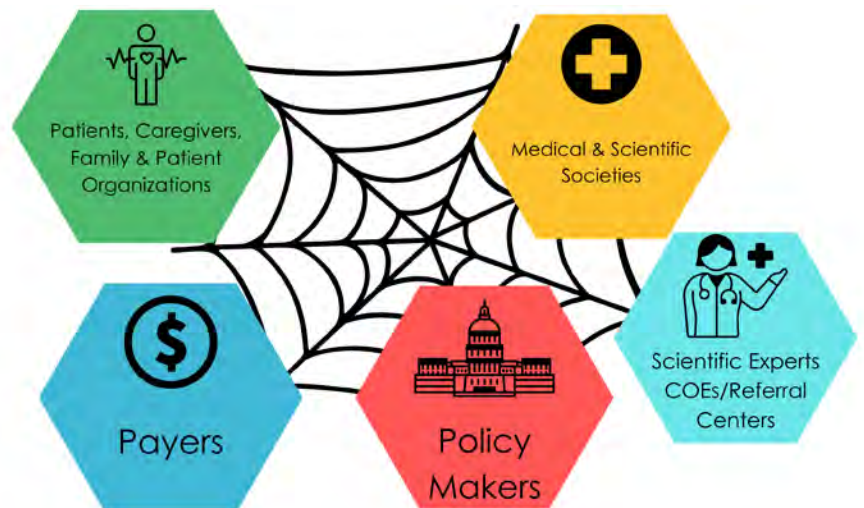
is MAPS Director of Communications & Marketing. He has been featured on Good Morning America, NPR, CBS, BBC and the Discovery Channel and wrote for *The New York Times*, *WIRED*, *Scientific American*, *Sky & Telescope* and *Men's Health*.

Kirk Shepard, Charlotte Kremer and Garth Sundem

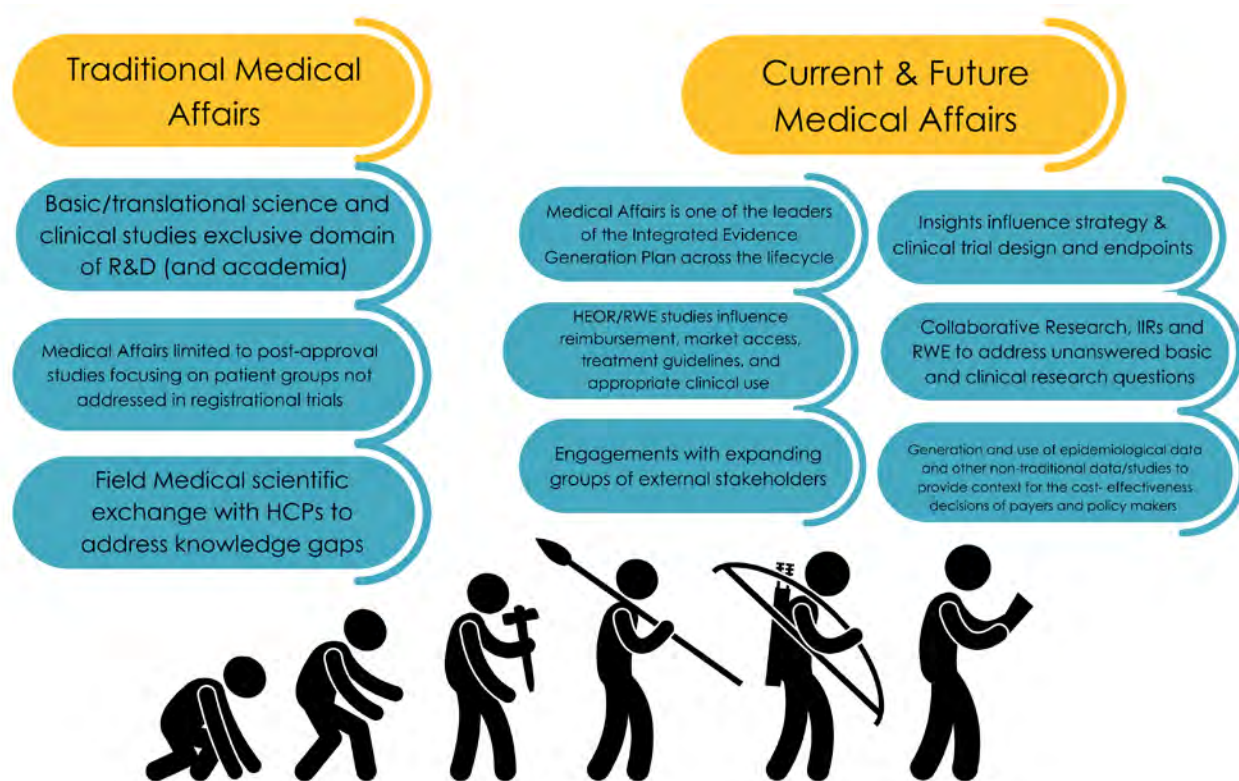
describe the role of Medical Affairs in ensuring patients benefit from pharmaceutical industry innovations.

Medical Affairs is the least understood of the biopharmaceutical industry's three functional pillars. Research and development discover new health innovations. Commercial markets and sells them. But what does the Medical Affairs pillar do? The answer is that people within Medical Affairs do many things. For example, a PharmD student might find a fellowship in industry that leads to a role as a Medical Science Liaison, working out of a home office to conduct scientific exchange and provide expert advice to healthcare professionals to guide clinical care. Or, an MD might transition from leading clinical trials at an academic medical center into a similar role managing Medical Affairs-sponsored clinical trials. Or, a basic researcher might decide their heart lies in writing about science and leverage their skills and knowledge with academic journals into a position in Medical Affairs publications.

In part, the diversity of Medical Affairs is what makes it hard to understand. Even within the profession, the three people in the previous examples might have only a cursory understanding of what their colleagues do in other subfunctions (in this case, Field Medical, Evidence Generation, and Medical Communications). This is true despite the benefits of close collaboration between these groups; for instance, a research study by an Evidence Generation team could form the basis for a journal article by Publications, with Field Medical team members communicating the results to healthcare professionals.



Key external stakeholders in rare disease.



Evolution of Medical Affairs

Thus, the primary purpose of this textbook is to create a clear understanding of the profession within the profession – providing a normative overview of Medical Affairs subfunctions along with a baseline understanding of individuals’ roles within these subfunctions.

Furthermore, the book demonstrates how all these subfunctions work together to ensure that industry products benefit patients and society. Traditionally, health sciences companies were structured to bring products through clinical trials to the “finish line” of regulatory approval. The thinking went that if a drug or device worked in trials, it would work broadly across real-world populations – and healthcare professionals were largely left to sort out any nuances in clinical use.

Too often, the result was that promising products were misunderstood, misused, and misvalued, blunting their uptake and thus their ability to impact patients’ lives.

Today, the scientific complexity of treatments has increased, with new drugs and devices targeting specific patient populations. For some time, we’ve known that the safety and efficacy data from registration trials, performed with a narrow and carefully selected patient population, may not perfectly generalize to a real-world patient population that includes individuals with diverse geographic, racial, ethnic, age, compliance, comorbidity, and treatment journey characteristics. At the same time, audiences desiring medical and scientific information have further expanded to include, for example, patients and patient advocacy groups, and all audiences expect near real-time, accurate information presented across a range of channels.

Medical Affairs is the function within the broader biopharmaceutical industry best positioned to help external stakeholders make sense of treatment complexity; it is the function best positioned to answer questions of real-world safety and effectiveness; and it is the function best positioned to not only disseminate scientific knowledge but to also listen and respond to external stakeholders’ need for information.

In other words, if R&D develops drugs and Commercial sells them, then Medical Affairs ensures that health innovations benefit patients, transforming science into real-world clinical outcomes. Through leadership, research, communication, and partnerships with individuals and organizations, Medical Affairs powers the ability of industry to serve real people in the real world with real innovations that make a population-scale difference in improving quantity and quality of life.

Medical Affairs Professional Society (MAPS) is the premier non-profit global Medical Affairs organization FOR Medical Affairs professionals BY Medical Affairs professionals across all different levels of experience/specialty to engage, empower and educate.



Medical Affairs

The Roles, Value and Practice of Medical Affairs in the Biopharmaceutical and Medical Technology Industries

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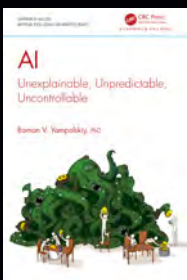
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is a Tenured Associate Professor in the department of Computer Engineering and Computer Science at the Speed School of Engineering, University of Louisville. He is the founding and current director of the Cyber Security Lab and an author of many books including *Artificial Superintelligence: a Futuristic Approach*. During his tenure at UofL, Dr. Yampolskiy has been recognized as: Distinguished Teaching Professor, Professor of the Year, Faculty Favorite, Top 4 Faculty, Leader in Engineering Education, Top 10 of Online College Professor of the Year, and Outstanding Early Career in Education award winner among many other honors and distinctions. Yampolskiy is a Senior member of IEEE and AGI; Member of Kentucky Academy of Science, and Research Advisor for MIRI and Associate of GCRI..



AI
Unexplainable, Unpredictable,
Uncontrollable

Roman V. Yampolskiy

February 23, 2024
ISBN 9781032576268
304 Pages • 4 Color & 1 B/W Illustrations
Subject: AI

www.routledge.com/9781032576268

IN CONVERSATION WITH

Roman V. Yampolskiy

the author of *AI: Unexplainable, Unpredictable, Uncontrollable*, about the deeply enigmatic nature of Artificial Intelligence.

What motivated you to write *AI: Unexplainable, Unpredictable, Uncontrollable*?

The motivation came from understanding the rapidly evolving field of Artificial Intelligence (AI) and the recognition of the critical gaps and challenges in this domain. As I am a researcher and an expert in AI Safety and Security, the drive to write this book was rooted in the urgency to address the complexities and risks associated with advanced AI systems. It was also motivated by the need to inform and prepare society, policymakers, and the AI research community about the potential trajectories and implications of AI development.

Why do you think Artificial Intelligence is “unexplainable, unpredictable, and uncontrollable?”

The characterization of AI as “unexplainable, unpredictable, and uncontrollable” reflects the intrinsic complexities and limitations of current AI technologies. Unexplainability pertains to the often opaque nature of AI decision-making processes, especially in deep learning, where the reasoning behind specific decisions or predictions can be challenging to interpret. Unpredictability refers to the difficulty in foreseeing the outcomes or behaviors of AI systems, particularly when they encounter novel situations or data outside their training parameters. Uncontrollability highlights the challenges in ensuring that AI systems consistently adhere to human values, intentions, and control, especially as they become more autonomous and capable.

What are the potential hazards and unintentional consequences of AI?

The potential hazards and unintentional consequences of AI encompass a broad spectrum. This includes ethical dilemmas, such as bias in decision-making and privacy concerns; safety issues, such as autonomous systems acting in unintended ways; and broader societal impacts, like unemployment due to automation or the amplification of misinformation. There is also the existential risk that could arise from superintelligent AI systems whose goals diverge from human values.

What is the AI Control problem that you describe in the book?

The AI Control Problem, as discussed in the book, revolves around the challenge of ensuring that highly advanced AI systems act in ways that are

aligned with human values and intentions. This problem becomes increasingly complex as AI systems grow in intelligence and autonomy. The control problem encompasses technical aspects (like safe alignment, robustness, and interpretability), ethical considerations (aligning AI with diverse human values), and governance issues (creating effective policies and regulations).

Do you think humans can develop AI that is safe and secure? How?

The possibility of developing safe and secure AI hinges on advancements in AI safety research, ethical AI design, and robust governance frameworks. This involves interdisciplinary efforts, combining insights from computer science, ethics, policy, and other relevant fields. Techniques like transparency in AI processes, robust testing and validation methods, and adaptable governance structures are crucial. The book argues that while it's extremely challenging, it is essential to strive for safe AI development to mitigate risks.

Who is your book for and what do you want readers to learn from it?

The book is aimed at a broad audience, including AI researchers, policymakers, industry professionals, and the general public interested in the implications of AI. The objective would be to educate readers about the complexities, challenges, and ethical considerations in AI development. It aims to foster a deeper understanding of the potential risks and to encourage responsible and informed engagement with AI technologies, both in development and policy-making.

How do you see the role of AI ethics evolving in the development and deployment of AI systems, and what steps do you believe are necessary to integrate ethical considerations effectively into AI research and industry practices?

The integration of AI ethics into AI development is paramount for ensuring that AI technologies benefit society while minimizing harm. This integration requires a multi-faceted approach. Firstly, there needs to be a stronger emphasis on interdisciplinary research, bringing together experts from computer science, ethics, sociology, law, and other relevant fields to collaboratively address the ethical implications of AI. Secondly, the education and training of AI practitioners should include ethical considerations and societal impacts as core components, fostering a culture of responsibility and ethical awareness in the AI community. Additionally, developing ethical guidelines and frameworks that are not only theoretical but also practically implementable is crucial. These frameworks should be adaptable



to the rapid advancements in AI technology and diverse cultural contexts. Industry practices must evolve to include rigorous ethical review processes, much like the institutional review boards in scientific research. Furthermore, public engagement and stakeholder involvement are essential in identifying and addressing diverse societal needs and values in AI development.

What are your predictions or recommendations for the future landscape of AI governance? How should governments, international organizations, and the AI community collaborate to manage the risks and harness the benefits of AI at a global scale?

The future landscape of AI governance is likely to be a complex and evolving scenario, requiring coordinated efforts at multiple levels. At the national level, governments need to develop robust policies and regulatory frameworks that encourage innovation in AI while ensuring safety, transparency, and accountability. These policies should be flexible enough to adapt to the rapid pace of technological change in AI. Internationally, there's a need for global cooperation to address issues that transcend borders, such as data privacy, cybersecurity, and the ethical use of AI in surveillance and defense. Organizations like the United Nations could play a pivotal role in facilitating dialogue and consensus-building among nations. This cooperation is critical for addressing global challenges like digital inequality and ensuring that the benefits of AI are accessible to all. Collaboration between the AI research community, industry, governments, and civil society is also essential. This collaboration should aim at sharing best practices, research findings, and developing common standards and norms. Such an inclusive approach is necessary to balance innovation with ethical considerations and societal well-being. The governance of AI should thus be a shared responsibility, reflecting a diverse range of perspectives and interests to manage the risks and maximize the benefits of AI technologies.



Tracy Fullerton

is an award-winning game designer and educator with over 25 years of professional experience, including winning the Games for Change Game of the Year Award for her independent game *Walden*, a game. She has also been awarded **the 2016 GDC Ambassador Award, the 2015 Games for Change Game Changer Award, and the IndieCade 2013 Trailblazer award** for her pioneering work in the independent games community. Tracy is a Professor of Interactive Media & Games at the USC School of Cinematic Arts and the founding Director (emeritus) of the USC Games Program, which has regularly been ranked the #1 game design program in North America by the Princeton Review.



Game Design Workshop A Playcentric Approach to Creating Innovative Games, 5th Edition **Tracy Fullerton**

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616 Pages • 271 Color & 7 B/W Illustrations
Subject: Game Development
www.routledge.com/9781032607009

Tracy Fullerton

the author of *Game Design Workshop* 5th edition, explains how to create the digital games you love to play.

So much has changed in the game industry since I wrote the first edition of this book twenty years ago. There has been an explosion in new platforms of play and an emergence of exciting new markets and genres of games. Today, it seems that everyone plays games, everywhere. The one constant I see in this world of change is the need for innovative game designers to realize the potential for play in all of these new platforms and places.

And so I offer this updated twentieth anniversary edition, with its strong focus still on learning the playcentric process of design and iteration, but enhanced with updated techniques and ideas that have sprung from today's industry, and filled with the perspectives of new designers who are on the front lines of facing today's design challenges and opportunities—designers such as Jane McGonigal, Ian Dallas, Dan Cook, Wren Brier, Derek Yu, Shawn Alexander Allen, Elizabeth LaPensée, Mary Flanagan, Bruce Straley, Neil Jones, Anna Anthropy, Christina Norman, and more. This edition includes sidebars on building inclusive teams, on using AI in the creative process, designing game and narrative beats for impactful moments of play, designing innovative mobile games and virtual reality content, on art games and social games, and on techniques for tuning games and using metrics to get the best player experience.

Back when I wrote the first version of this book, there was a sense in the field that game design was not something that could be taught. You either had a “knack” for games or you didn't. Needless to say, I didn't agree. Fast-forward fifteen years and the sense is completely different. Now, game design programs, such as the one that I direct at USC, are seen as incubators for innovative ideas and people. The training that students get in such programs is coalescing into a set of best practices that turn out creative people who are able to work well on diverse teams, and who have strong design skills and understanding of how to create interesting game mechanics. Some of these programs have arisen in technical schools, some in art schools, and others in a staggering variety of disciplines that cross the humanities, arts, and sciences. Game design is everywhere.

Not only is everyone learning game design, but everyone is doing it. Today's schoolchildren are using construction games like *Minecraft* or *Roblox* to learn everything from art and coding to history and environmental awareness. Their love of games is leading them to learn critical skills like systems thinking and procedurality. They are modding and making and playing and learning and the boundaries between these things are no longer clear or important. What will the world look like in another fifteen years, when the children who grew up learning from and thinking in game systems become adults? What games will they want to play then? What systems will they engage with to learn more about the world? I can hardly wait to see.

The students who studied game design with me while I wrote the earlier editions of this book have completely stunned me with their talent and vision.



They have set new levels of aesthetic expectations for the field as a whole and are deeply embedded in the changes that will define the next generation of play. The games that I see coming out of the industry today, especially in the world of experimental and independent designs, make me believe that this is only the beginning of the evolution of play that we will see, culturally, creatively, and commercially.

I am so thrilled to be part of this change, and to know that this book has inspired so many to follow the path of innovative game design. I can only hope that the students and designers who read this new edition will do so with the same passion and commitment as those who have done in the past twenty years.

Game Design Workshop puts you to work prototyping, playtesting, and revising your own games with time-tested methods and tools. These skills will provide the foundation for your career in any facet of the game industry including design, producing, programming, and visual design.

Play on!

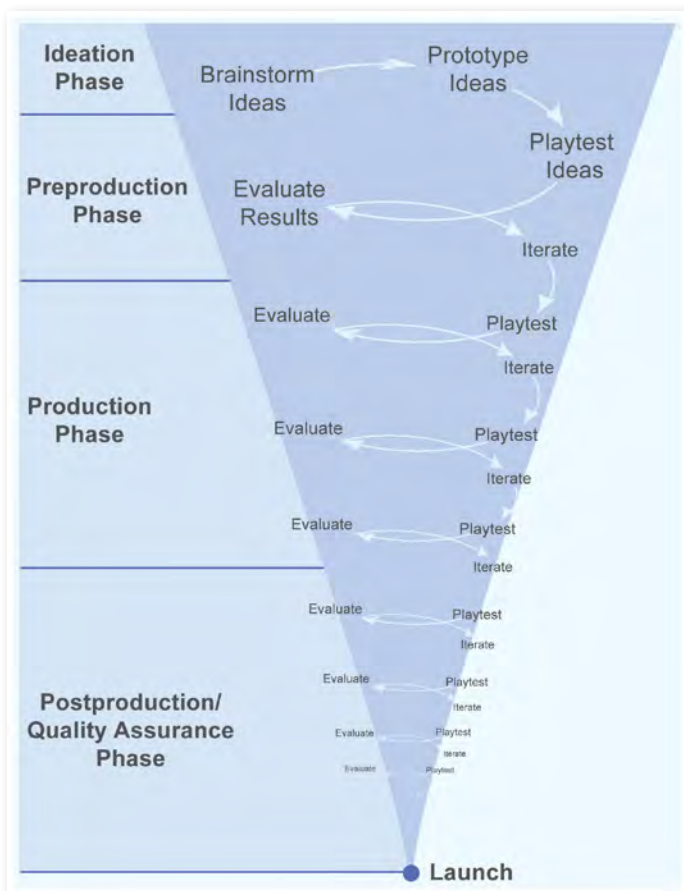
Endorsements for the 4th edition

“Game Design Workshop is a truly great book, and has become, in my opinion, the de facto standard text for beginner- to intermediate-level game design education.”

– Richard Lemarchand, *Interactive Media & Games Division, School of Cinematic Arts, University of Southern California*

“Tracy Fullerton’s *Game Design Workshop* covers pretty much everything a working or wannabe game designer needs to know. She covers game theory, concepting, prototyping, testing and tuning, with stops along the way to discuss what it means to a professional game designer and how to land a job. When I started thinking about my game studies course at the University of Texas at Austin, this was one book I knew I had to use.”

– Warren Spector, *Studio Director, OtherSide Entertainment*





Nathan Coyle

the author of *Open Data for Everybody*,
on how to use open data for social good.

Nathan Coyle

is a British digital activist, former Director of a leading civic innovation organization and currently leads on Peace Technology for The Austrian Centre for Peace in Vienna. With a wealth of international experience, Nathan has partnered with governments across the globe, both local and central, to enhance their digital outreach efforts, employing innovative strategies like hackathons, toolkit design, civic tech, and human-centred design. He has conducted talks and lectures across Europe on the subject of making open data and smart cities more accessible, including a TEDx talk and has written for various publications such as The Huffington Post, The Guardian and Vice Media. He is also a keen developer and graphic designer, who tried to instill creativity in every aspect of policy design.

Data connects everyone in the world in some way or another, from your smartphone to your TV, and even in the way you cross borders. It's a pivotal cog that keeps the world turning, and even if you're not fully aware, it's a significant part of your life.

But data, in its transparent form—open data—is a highly disruptive tool that can effect systemic social change, breaking down barriers.

Open data refers to freely accessible information that anyone can use, reuse, and share with minimal restrictions, typically requiring attribution and sharing alike. Essentially, open data isn't just a license; it's also a mindset, as I've come to discover. It's facing an identity crisis. Open data has often been associated with a high corporate image due to its significant influence on the business sector, especially its influence on government. There's a perception that it's exclusively for use by businesses, academics, and scientific research. Consequently, institutions of this nature have been sought out to shape its branding and narrative—such as the government-backed agency in my country, the United Kingdom, responsible for fostering transparency, openness, and smart practices in local governments.

However, there's a forgotten group evident in the way open data is branded: civil society and the voluntary sector. A simple visit to any open data portal worldwide would easily mislead one into thinking they are corporate entities in their own right. There's no need for a data scientist here; it's apparent that our community projects feel this isn't for them.

Yet, open data has the potential to connect our skills and enable collaborative work on various issues, be it activism, health, or academia. Irrespective of the field, open data helps us work on multiple projects simultaneously, solving real problems, driving innovation, and scientific discoveries, and even setting up projects based on specific datasets. It is an incredibly powerful tool for capacity building, assisting the third sector with everything from funding to documenting the impact they make which led me to set out to write my first book to highlight this issue.

It's a series of zeros and ones that assist us in working on projects across all facets of our community ecosystem, collaboratively working together to resolve social issues that potentially plague our society. From government corruption, conflict prevention, and water shortages in poverty-stricken areas to curing diseases, endless opportunities and examples abound.

The book is full of hand-drawn diagrams, here are the building blocks of using open data to build trust.



Open Data for Everybody
Using Open Data for Social Good
Nathan Coyle

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open data has the potential to connect our skills
and enable collaborative work on various issues,
be it activism, health, or academia

Open data suffers from an unjust reputation rooted in the corporate image it often portrays, heavily influenced by the sectors that primarily utilize it. This misalignment between open data's potential and its presented image leads to an identity crisis.

For nearly a decade, starting from grassroots work, stemming from what people might consider an economically disadvantaged background myself, I've seen the real value these organizations bring to people. From those barely getting by to those living in crisis, they need protection at all costs—especially since after COVID, there is less public money available, compelling third-sector organizations to be more resourceful and innovative.

The crux of open data's potential lies beyond corporate corridors, presenting itself as a catalyst for social change. NGOs armed with open data can substantiate their causes, spotlight disparities, and catalyze policy changes. Yet, these organizations remain largely unaware of open data's potential, often due to its alienating language and the business-centric facade presented in data portals worldwide.

To bridge this gap, storytelling emerges as a powerful tool to translate open data complexities into relatable terms. In areas with limited tech industries where open data remains an unfamiliar concept, narratives play a pivotal role. Open data, when made intelligible through relatable language, holds immense promise for grassroots organizations, transcending its current image confined within corporate realms.

The term "open data" was first coined in 1995 by an American think tank, but the idea traces back to the early 1940s when Robert King Merton described the importance of freely accessible research results for all. He believed that researchers should contribute to the "common pot" and embrace the idea of relinquishing intellectual property rights to foster knowledge advancement. This signifies that its roots lie in societal change, but somewhere along its evolution, it lost its path.

I've experienced this firsthand—from working in the social sector, participating in local government steering groups across the UK, to leading a civic innovation organization collaborating with numerous international central governments from various EU countries, the USA, Colombia, the Palestinian Authority, Kenya, Kosovo, Albania and more. We aimed to help them design training and craft more inclusive policies concerning open data for social good, getting their data into the hands of changemakers.

Along this journey, I learned about the issues and potential solutions. As I transition into digital peacebuilding, I wanted to document my path, aiding others in crafting an accessible narrative around open data, what has worked via real hands-on work alongside practical applications that anybody can run in their place of work or community. My book *Open Data for Everybody: Using Open Data for Social Good* encompasses everything I've learned and put into practice. From foundational issues and workshop design to policy and strategy, and of course, mistakes, it's written in a style that everyone can understand. I aspire to share it with every government worker striving for more social impact in their work, all the way down to community activists aiming to create community resilience in their neighborhoods.

Making open data human-centered necessitates a pivotal shift, placing people at the core of data initiatives and this is a large part of the book. This approach underscores the significance of empathy, user involvement, and understanding specific needs in the design process. Human-centered design aims to create solutions precisely tailored to these needs, starting with a comprehensive understanding of individuals and their requirements. It actively engages users in the ideation, prototyping, and iterative phases, departing from traditional product development methods by consistently involving them throughout the design journey.

Moreover, the human-centered approach in open data initiatives revolves around tailoring programs to diverse user groups. Understanding the varied interests and needs of different user demographics becomes crucial to enhancing the accessibility and usefulness of open data. This approach prioritizes involving users in the design process, ensuring that open data programs effectively resonate with their intentions.

The digital revolution has changed the way we live, work, and even love. In a world where technology is deeply embedded in our lives, could it be time to recognize technology as a human right rather than merely a luxury?

***Open Data for Everybody: Using Open Data for Social Good* is my love letter to open data and its transformative potential. Love isn't always straightforward, but when you care deeply about something that isn't working the way it should, you strive to try and change it. Within its pages, I lay out my case to do just that.**





Jim Duggan

is a Personal Professor in Computer Science at the University of Galway, Ireland. He lectures courses in R, MATLAB, and System Dynamics, and is a certified RStudio tidyverse instructor. His research interests are interdisciplinary, and focus on the use of simulation and computational methods to support public health policy.

You can learn more about Jim's work on R and computation modelling on his GitHub site <https://github.com/JimDuggan>

IN CONVERSATION WITH

Jim Duggan

the author of *Exploring Operations Research with R*, about his new book.

Can you summarise the book in one or two sentences?

The book provides a comprehensive introduction to R and demonstrates how R can be applied to a range of operations research challenges in the domains of public health, infectious diseases, and energy generation. The book, aimed at researchers and practitioners, can serve as a primary textbook for a course in R, with applications in operations research.

What motivated you to write this book?

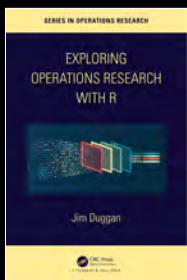
Overall, my motivation for writing the book is that I can see excellent potential for applying computational thinking to the field of operations research. To paraphrase Jay W. Forrester, the founder of the field of System Dynamics, R can support the process of turning information into action.

The origins of the book date to 2015, when, as part of my contribution to the University of Galway's M.Sc. in Computer Science (Data Analytics), I designed an R module entitled Programming for Data Analytics. This module covered the essentials of Base R, and also exciting new R tools such as the tidyverse and Shiny. As I gained experience and expertise in R, I was highly impressed with how well it supports the data science process, through ideas such as functions, objects, vectorisation, and data processing pipelines.

I also discovered that R had excellent support for ordinary differential equations, which are used as part of the system dynamics method, and based on this, I wrote the textbook Systems Dynamics Modeling with R, to provide a unique knowledge base for SD modelers to enhance policy analysis by using computational methods that are accessible via the R Framework (e.g. the CRAN package deSolve). The response from the system dynamics community to the book was very positive, and I subsequently delivered several workshops showing how R can be used to create open-source system dynamics simulation models, and also published tutorial guides on how R can support modelling.

Given the strong links between the operations research and system dynamics communities, I had further opportunities to present this approach to colleagues in the Operational Research Society, and also design and deliver a professional development module Data Science for Operational Researchers Using R.

Feedback from these workshops and courses was encouraging and confirmed for me the potential for a detailed programming book in R that could also demonstrate the opportunity for applying R to operations research problems.



Exploring Operations Research with R

Jim Duggan

April 17, 2024

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400 Pages • 36 Color Illustrations

Subject: Programming Languages / Operations Research

www.routledge.com/9781032277165

Why R over any other programming language?

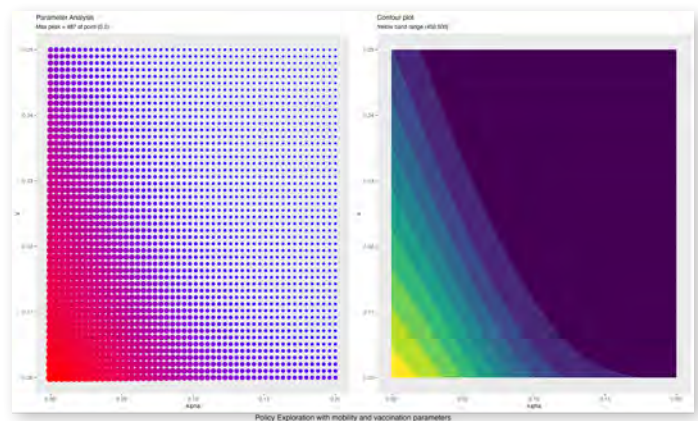
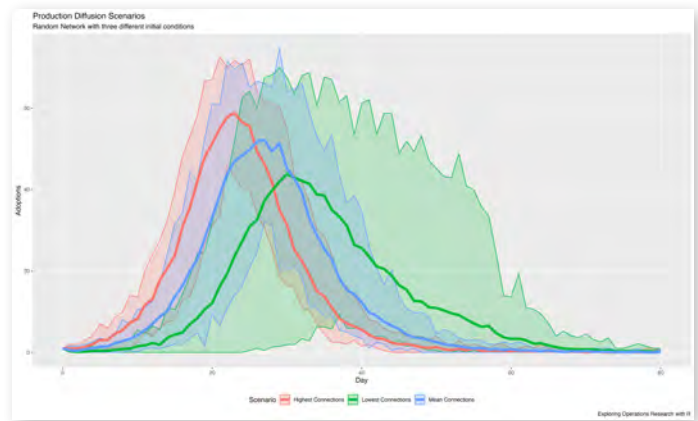
There are several reasons why R is an attractive programming language for operations research:

- R's excellent support for vectorisation and data pipelines means that effective solutions can be found with short snippets of code. With R an analyst can quickly process data using functions, thereby reducing the "coding overhead".
- R has a large library of packages that can be easily installed from the Comprehensive R Archive Network (CRAN). These are all open source, and include libraries to support machine learning and simulation, which are key methods in operations research.
- R has an outstanding visualisation library ggplot2 which can be used to support exploratory data analysis and communication of results.
- R is used by data scientists across many disciplines and therefore supports domains that operations research can be applied to, for example, medicine, public health, business, and energy. R can also facilitate knowledge sharing between disciplines, which can enhance the process of interdisciplinary collaboration. For example, in the area of system dynamics simulation, R can be used to prepare data for models, calibrate models to data, run sensitivity analysis, visualise output, and prepare automated reports to support the communication of results and insights.

What makes Operations Research techniques so powerful for areas like public health?

Operations Research is an applied field that leverages the power of mathematical and computational thinking to help solve real-world problems. In the area of public health OR, can be used to address resource allocation and capacity planning problems, using techniques such as linear programming, agent-based simulation, and system dynamics.

An advantage of the OR approach is that it is grounded in a solution-driven methodology that relies on continual interaction with clients and problem owners, for example, with distinct stages such as problem formulation, model design, model testing, and validation and implementation.



What do you think the next major advance in Operations Research will be?

I think an opportunity in operations research is having greater integration with data science, machine learning, and artificial intelligence. With the growth in available data sets and the importance of analysing and interpreting data, it's increasingly likely that operations researchers will deploy multiple methods. For example, combining the use of inference methods with mathematical modelling to generate robust estimates of parameters, and tools such as R are ideally placed to support this. New tools in R such as GitHub co-pilot present the opportunity of an AI pair programmer that offers autocomplete-style suggestions as you write code, and these advances can augment the solutions process within operations research.

If a reader were to take away just one thing from this book, what do you hope it would be?

A strong practical knowledge of R can enhance their skills for addressing operations research challenges across many domains.



Sarah Horton

has over 20 years of experience helping organizations create “born accessible” technology. She is an author of books, articles, and papers on designing technology to improve quality of life. She is currently UX Strategy Lead at Harvard University, Visiting Research Fellow at the University of Southampton, and Invited Expert with Teach Access and the W3C Accessibility Guidelines Working Group.



David Sloan

is UX Practice Manager at TPGi, a specialist digital accessibility services provider, and works with a range of clients to help them create accessible digital user experiences and build accessibility capacity in a sustainable way.

IN CONVERSATION WITH

Sarah Horton and David Sloan

the authors of *What Every Engineer Should Know About Digital Accessibility*, about their new book and explain why accessibility is a core quality of digital products.

What motivated you to develop this book? What do you hope to achieve through it?

We have both dedicated our professional lives to digital accessibility. As designers and problem solvers and accidental technologists, we find working in digital accessibility gratifying. Technology is an enabler for everyone — despite the bad reputation it often generates. There is so much that humans can accomplish because of technology. Many of us take technology for granted and expect to be able to avail ourselves of technology tools to accomplish tasks related to work, relationships, civic engagement, healthcare, commerce — the list goes on! However, people with accessibility needs are not equally considered by people who build technologies. And this is extra unfortunate because technology can be immensely enabling — a game changer — for people with disabilities. So as technologists who love to solve important problems, and who recognize the power of assistive technologies and the limited digital accessibility awareness and skills in the technology sector, we saw an opportunity to build capacity by educating engineers on what they should know about digital accessibility.

We hope the book will provide a solid foundation in the core issues related to digital accessibility. This foundational approach is necessary due to the many factors and dimensions that are germane to being an accessibility-informed professional. It's not enough to understand the ins and outs of technical specifications for things like accessible user interface elements and screen reader compatibility. Engineers need to know why they are including those specifications and implementing those requirements — who benefits, who is harmed when accessibility needs aren't addressed. Even if they aren't directly involved in research and design, engineers need to be able to translate design requirements into technical specifications and test whether accessibility features are correctly implemented so that they improve the user experience and aren't creating barriers. They need to appreciate all the factors that go into designing and implementing accessibility features and maintaining them over time. And they need to understand the importance of end-user support and communications as part of an accessibility practice. We hope that readers will come away from reading the book with this solid foundation of what every engineer should know about digital accessibility, solid enough to sustain them in practice over the full course of their career.

What are the current most exciting developments in digital accessibility?

There is growing attention to codifying standards and regulating digital accessibility around the world, which means technologists will have clearly defined guidance on what they should know and do. For example, in the United States, the Department of Justice (DOJ) is currently considering formal rulemaking, specifying the requirements that technology professionals must follow to comply with the Americans with Disabilities Act (ADA). The DOJ has long affirmed that digital accessibility falls under the requirements of the ADA and that inaccessible technology is a form of disability discrimination. But despite prior efforts, they haven't yet specified requirements for compliance with the ADA for digital resources. Specific standards and regulations will have a huge impact on technology professionalism, providing the foundation for technology-related education program accreditation and professional licensing in the digital world, similar to what the ADA Standards for Accessible Design did for architecture and engineering professions in the physical world.

We're also excited about developments in the assistive technology used by people with disabilities to interact with digital products. Assistive technology innovation and integration into mainstream consumer products like smartphones and TVs help ensure these products are more usable by more people, out of the box. However, advances in assistive technology still need to be supported by accessible websites and apps. After all, even the most well-engineered wheelchair in the world still needs a doorway that's wide enough for it to fit through.

What are the current challenges?


Too often, insufficient attention is paid to accessibility at the start of the journey to build a digital product. That means that if accessibility does become a priority later on, decisions have already been made on what the product should look like, how it should behave, and how it should be built — decisions that limit the chances of being successful in meeting accessibility goals. The result is that accessibility gets the reputation of being challenging to implement effectively, and consequently, is too difficult and expensive to prioritize.

In addition, all too often we see technology innovations and trends that don't prioritize accessibility, meaning that the tools and processes product teams adopt make it more difficult for them to include accessibility in design and development efforts. The tools themselves may not be accessible, meaning team members with accessibility needs may be limited in how they can participate. So a major challenge is ensuring that accessibility awareness is distributed across a product team — that everyone has a shared accessibility goal, understands their particular role in meeting that goal, and has the knowledge, skills, and tools to be successful.

Is there a particular chapter or section you strongly recommend? Why?

That's a hard question to answer as we want readers to read the whole book! We divided the book into two sections — the first section to provide readers with what we see as an essential grounding on why digital accessibility is so important by understanding who benefits from accessibility and how, and the second section to provide practical skills that can be applied throughout the product development lifecycle.

But if we were pressed to choose just one, we might suggest Chapter 3, User Accessibility Needs. This chapter focuses on the broad range of people with accessibility needs who benefit from digital accessibility — people with disabilities, older people, and people with temporary or situational impairments. When we understand why we're including accessibility as a core product quality and for whom, we humanize the design challenge. From that starting point, it only makes sense to provide solutions that genuinely benefit the people who use the products that we build.



Written to be accessible to non-experts in the subject area, *What Every Engineer Should Know about Digital Accessibility* is aimed at students, professionals, and researchers in the field of software engineering. The book is part of *What Every Engineer Should Know* series.

This is the series of concise, easy-to-understand volumes provides engineers with a compact set of primers on practical subjects such as patents, contracts, software, business communication, management science, and risk analysis, as well as more specific topics like embedded systems design. The books address important problems encountered in the line of daily practice—problems concerning new technology, business, law, and related technical fields.

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What Every Engineer Should Know About Digital Accessibility

Sarah Horton and David Sloan

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Youngjo Lee

is a Professor Emeritus of Statistics at Seoul National University, an Endowed-Chair Professor of Data and Knowledge Service Engineering at Dankook University, and a Vice President of the Korean Academy of Science and Technology.

IN CONVERSATION WITH

Yudi Pawitan and Youngjo Lee

the authors of *Philosophies, Puzzles and Paradoxes*, about their new book and philosophical approaches to statistics.

What *Philosophies, Puzzles and Paradoxes* is about?

Our new book covers the philosophy of science, probability, likelihood, and statistics. The Practical Man might say that he has no use for truth; what matters is maximizing his expected utility. However, when we perform data analysis, there is a feeling that we are searching for the truth – the true model, the true parameter, etc. Scientists in various fields work to discover the true laws of nature, the true propositions in mathematics, the true causes of diseases, etc. It has taken philosophers many centuries to understand the nature of truth and the methods to establish it.

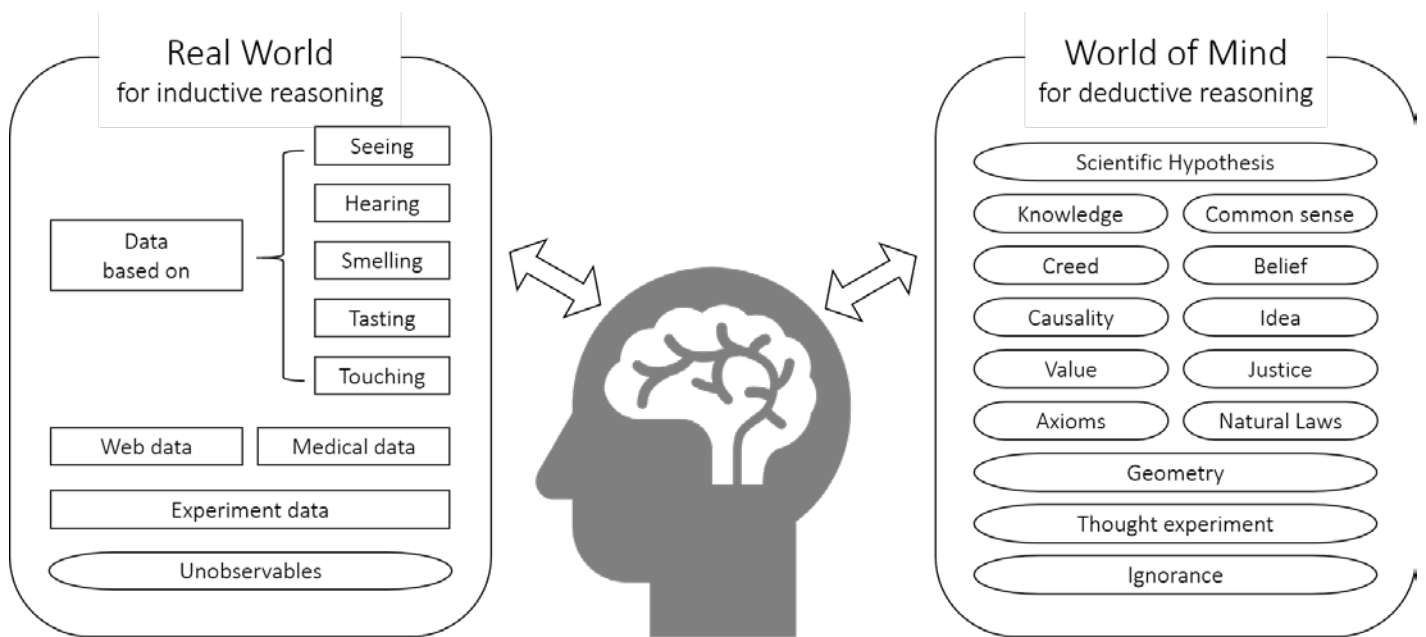
We start with what philosophers have thought and written about knowledge and truth. Then we discuss how they relate to deductive and inductive reasoning and ultimately scientific and statistical thinking. The book extensively covers the distinct philosophical approaches to statistics – Bayesian, frequentist, and likelihood, which arise from different interpretations or concepts of probability, and highlights these differences through numerous puzzles and paradoxes.

Philosophical disagreements between the frequentist and Bayesian schools have been debated for over a century. Serious students of statistics are likely to be perplexed by these disagreements, as they do not occur in other areas of mathematics or scientific disciplines such as physics, chemistry, or biology. Unfortunately, although the passionate arguments have largely died down, it's not due to any consensus. Statisticians still argue about the role of P-value and how to interpret the confidence interval. Whatever truth forms the foundation of our subject, it must be of the elusive kind that Oscar Wilde said to be rarely pure and never simple.

We have chosen puzzles and paradoxes that highlight the nature of probability, likelihood, and statistical inference; they are serious puzzles and paradoxes that have challenged the brightest minds over many decades. The existence of a paradox is a warning that there is something incomplete, if not wrong, in our reasoning. Paradoxes have always been important in the development of mathematics; for instance, Russell's paradox about the set of all sets that are not members of themselves led to the development of set theory, logic, and the foundation of mathematics. Similarly, in statistics, discussion and resolution of paradoxes may lead to a clarification of concepts and an enlargement of vocabulary that will strengthen the foundation of statistics.

Who should read it?

Our primary readers are statisticians, including professionals and students at all levels, who are interested in the philosophical foundation of probability and



The elements of inductive reasoning (left-hand side) and deductive reasoning (right-hand side).

statistics. The book should also be of interest to those who use or think about statistics – such as philosophers, social scientists, economists, computer scientists, and engineers developing artificial intelligence and big data analyses.

Unlike mathematics, statistics deals with real-world data and involves a higher degree of subjectivity due to the role of interpretation. Interpretation is shaped by context as well as the knowledge and personal philosophical preferences of the interpreter. This potentially leads to a variety of interpretations of concepts and results. That's why that knowledge of the philosophical foundation of probability and statistics should be an integral part of one's statistical training and practice.

We have written the book in an informal and non-technical style. It is for those interested in the philosophy of science, probability, likelihood, and statistics, as well as anyone just interested in puzzles and paradoxes. Most chapters are readable by non-specialists who have some knowledge of the elementary theory of probability and statistics, perhaps after one semester each. Several topics are indeed conceptually advanced, but the corresponding discussions rarely require deep knowledge or special technical competence. At the cost of some repetitiveness, we have tried to make the chapters as self-contained as possible so that the readers can jump around following their interest.

What motivated you to write *Philosophies, Puzzles and Paradoxes*?

Throughout our career, which started in the dark ages before the internet, we have been thinking about the foundation of statistics, about the differences between the philosophical views, particularly as highlighted by puzzles and paradoxes,

though never seriously enough to write anything about them. Now that we are at the end of our careers, we realize that it would have been good for our work to know and understand these issues earlier.

If a reader were to take one thing from your book, what do you think it should be?

The philosophical views on statistics have consequences for statistical practice, hence knowledge of their underlying philosophy helps to develop deeper statistical thinking.

Endorsement

"This is a remarkable book: wide-ranging, ambitious, challenging and profound but also intriguing, fascinating and original. Despite the fact that I have been thinking about the foundations of statistics for a long time, in particular as to how those foundations relate to what we want to do and achieve as practising statisticians, I learned a lot from reading it and also unlearned some things I thought I knew."

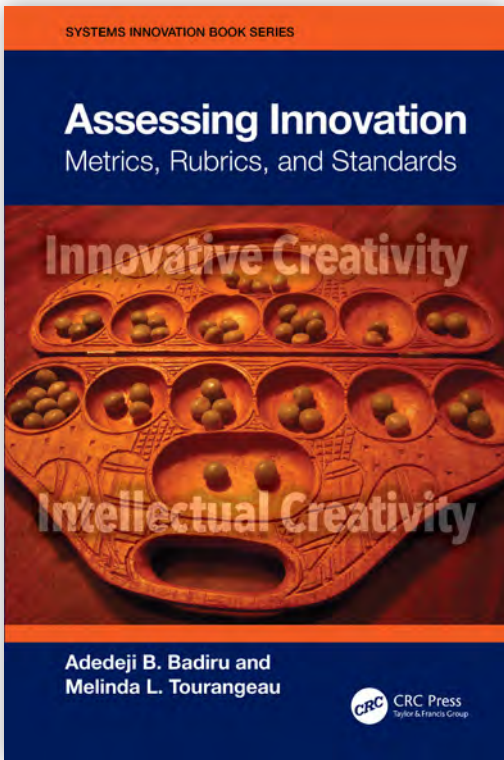
– Stephen Senn, from the Foreword of the book



Philosophies, Puzzles and Paradoxes

A Statistician's Search for Truth
Yudi Pawitan and Youngjo Lee

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Assessing Innovation

Metrics, Rubrics, and Standards

Adedeji B. Badiru and Melinda Tourangeau

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Melinda L. Tourangeau

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We cannot manage and control what we cannot measure and assess. Poor assessment results have been cited as a primary reason for project failures, in terms of cost, schedule, and quality. This book introduces metrics, rubrics, and standards pertinent to assessing innovation.

Assessing Innovation: Metrics, Rubrics, and Standards provides a new view for the embracing of innovation and establishing a quantitative basis for determining innovation levels. It bridges innovation with practice and presents a systems view as it incorporates the human element and discusses the different roles carried out. This book offers standards that will guide readers as they tackle sustaining innovation and leverages Badiru's Umbrella Model in the process.

The inclusion of methodologies suitable for determining where and when innovation is happening, and to what extent it is currently being carried out, make this a unique book, along with being the only book that addresses innovation metrics, rubrics, and standards in an integrated fashion. Seen as a way to help advance the diverse pursuit of innovation, this book is an ideal read for those in engineering, business, industry, academia, government, and the military.



Digital Effects, Strategies, and Industry 5.0

Fabio De Felice and Antonella Petrillo

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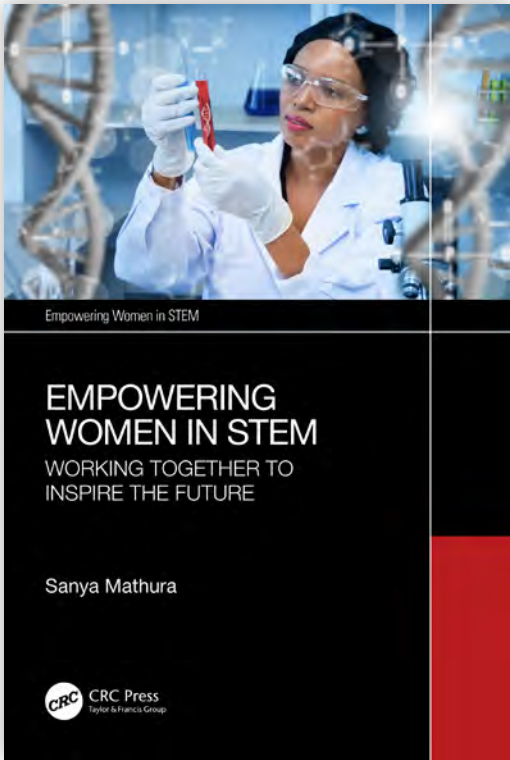
Antonella Petrillo

is a Professor in the Department of Engineering at the University of Naples "Parthenope". She is a member of the UNI/CT 519 Commission Enabling Technologies for Industry 4.0 of UNINFO. Dr. Petrillo is the author of more than 100 international publications on issues related to the optimization and innovation of production systems.

This book discusses the increase in global competitiveness which challenges the manufacturing market to integrate design and product in order to improve quality and process. The book goes on to examine digital manufacturing technologies and critiques how they are transforming every link of the manufacturing value chain.

Digital Effects, Strategies, and Industry 5.0 presents many different tooling processes that digital manufacturing utilizes such as artificial intelligence, automation and robotics, additive technology, human-machine interaction, and IoT. Digital manufacturing technologies and how they can transform every link of the manufacturing value chain, from research and development, supply chain, and factory operations to marketing, sales, and service, are examined within the book. Also included is coverage of Industry 5.0, the future, and how it is already starting a trend of change processes directed towards closer cooperation between man and machine, as well as systematic prevention of waste and wasting including industrial upcycling, along with case studies.

This book is aimed at professionals and students in the areas of manufacturing and processing, productivity improvement, environmental, engineering management, and information management.



Empowering Women in STEM

Working Together to Inspire the Future

Edited by Sanya Mathura

ISBN 9781032678948

March 1, 2024

256 Pages • 2 B/W Illustrations

Subject: Engineering Education & Management

www.routledge.com/9781032678948



Sanya Mathura

is the Founder of Strategic Reliability Solutions Ltd based in Trinidad & Tobago. She works with global affiliates in the areas of Reliability and Asset Management to bring these specialty niches to her clients. She has a BSc in Electrical & Computer Engineering and an MSc in Engineering Asset Management. Sanya has worked in the machinery lubrication industry for the past decade and assists various industries with machinery lubrication-related issues. She is the first person (and first female) in her country and the Caribbean to attain an ICML MLE (International Council for Machinery Lubrication, Machinery Lubrication Engineer) certification as well as the first female in the world to achieve the ICML VPR & VIM (Varnish and Deposits Prevention & Removal, Varnish and Deposits Measurement & Identification) badges. She can always be found supporting and advocating for women in STEM.

Throughout the globe, STEM careers exist. However, in some countries, particular STEM careers have been male-dominated while in other countries no gender biases exist as it relates to STEM careers. One common trend that occurs throughout the world is that women who are working in these STEM-related fields typically leave after about five years. Contrarily, it has also been uncovered that more women stay in these fields when we all work together.

Empowering Women in STEM: Working Together to Inspire the Future provides the platform to share the stories of those who have been in STEM careers but have pivoted to other areas by utilizing the STEM skills they learned. It bridges the gap between those who are thinking about entering or leaving STEM careers, along with those who want to encourage others into STEM careers. This book showcases how everyone's journey is different, some may have unexpected twists and turns while others appear to conform to the "normal" rules outlined by society. By offering a front-row seat on a journey that takes many different paths, this book provides advice that can lead to a STEM career with or without having a STEM background. The different roads taken are highlighted to show that everyone's path is unique and that is okay.

With the upcoming generation constantly looking for ways to "fit in" or be able to identify with role models to help them chart their way forward, this book ensures that they have not just one, but a variety of role models and success stories to relate to. It also offers some key advice which can be applied to any field they choose. In addition to having women and men from across the globe share their stories about various fields, this book also is written for professionals who may be considering a switch of careers or deciding to leave STEM and for university students who are trying to figure out their career choices and paths to take to gain more insight into possible new career goals in STEM.

OCCUPATIONAL SAFETY & HEALTH GUIDE SERIES

Loss Control Auditing

A Guide for Conducting Fire,
Safety, and Security Audits

Second Edition

E. Scott Dunlap



Loss Control Auditing

A Guide for Conducting Fire, Safety,
and Security Audits, *2nd Edition*

E. Scott Dunlap

December 29, 2023
ISBN 9781032436852
298 Pages • 45 B/W Illustrations
Subject: Engineering / Fire Protection & Safety
www.routledge.com/9781032436852



E. Scott 'Scotty' Dunlap

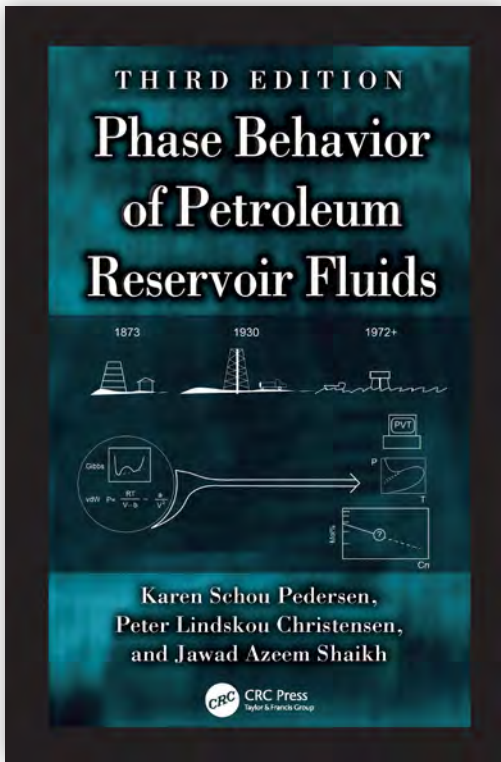
is a Professor in the School of Safety, Security, and Emergency Management at Eastern Kentucky University, USA. He had a 15-year career in practice prior to entering academia, including safety roles in residential mental health, warehousing and distribution, and agriculture settings. His current research focus on industry leader development and involvement in workplace safety and health and safety management system assessment.

Loss Control Auditing: A Guide for Conducting Fire, Safety, and Security Audits is a one-stop resource for both developing and executing a loss control audit program. This fully updated second edition addresses loss control auditing from the perspectives of workplace safety, physical security, and fire risks. It focuses on the three core areas of an audit: documentation review, physical inspection, and employee interviews, and presents a three-phase model – pre-audit, audit, and post-audit activities – which can be used for all three core areas.

This new edition benefits from the addition of auditing and system measurement material as promulgated in ISO 45001 and ANSI/ASSP Z10 standards and the Occupational Safety and Health Administration's Recommended Practices for Safety and Health Programs. It offers an expanded discussion of the application of auditing to the field of emergency management and new text explaining how leading and lagging measures can be used in the auditing process during assessment as well as in the post-audit evaluation. Subsidiary organizations and their integration into the auditing process, such as the areas of contractor management and temporary worker safety are covered in detail. The book discusses the integration of qualitative and quantitative measures in an effort to arrive at a more holistic scoring mechanism to assess organizational performance. In all, the depth of material presented in this thorough book showcases how to develop and execute a loss control management system audit program to a high quality.

An ideal read for industry professionals, students, and postgraduates in the fields of fire service, loss prevention, and safety management.





Phase Behavior of Petroleum Reservoir Fluids

3rd Edition

Karen Schou Pedersen, Peter Lindskou Christensen and Jawad Azeem Shaikh

January 26, 2024
 ISBN 9781138313811
 510 Pages • 285 B/W Illustrations
 Subject: Energy & Fuels Engineering
www.routledge.com/9781138313811



Karen Schou Pedersen

is a research associate at the University of Edinburgh and at the nuclear research center Institute Laue-Langevin, Grenoble, France.



Peter Lindskou Christensen

earned a PhD at the Technical University of Denmark. He was an associate professor at the Technical University of Denmark and taught thermodynamics, unit operations, and oil and gas technology and now is a senior consultant at Kapexy Aps.



Jawad Azeem Shaikh

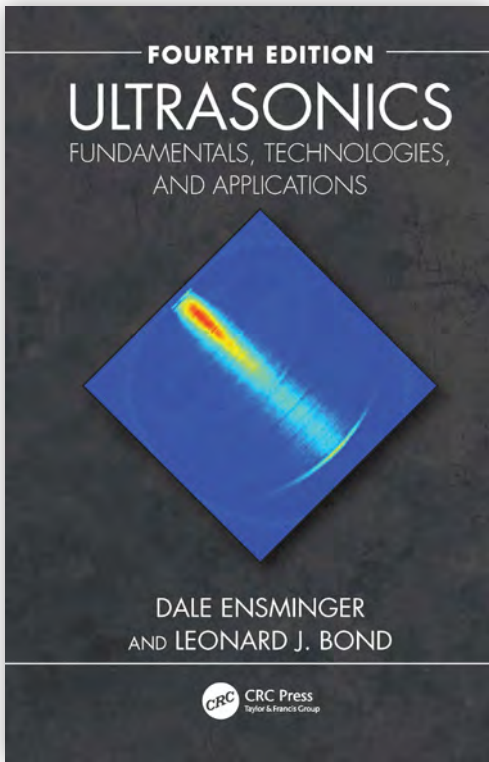
earned an MSc in petroleum technology at the University of Pune in India. His current position is Sales Director and Principal Consultant of Calsep FZ LLC in Dubai.

Developed in conjunction with several oil companies using experimental data for real reservoir fluids, *Phase Behavior of Petroleum Reservoir Fluids* introduces industry standard methods for modeling the phase behavior of petroleum reservoir fluids at different stages in the process. Keeping mathematics to a minimum, this book discusses sampling, characterization, compositional analyses, and equations of state used to simulate various pressure–volume–temperature (PVT) properties of reservoir fluids.

The 3rd edition has been updated throughout.

- Reflects advances in equation of state modeling for reservoir fluids and CO₂-rich fluids
- Presents association models along with non-classical mixing rules for handling fluids with aqueous components
- Has an extended coverage of reservoir fluid communication, energy properties, and asphaltene precipitation
- Provides practical knowledge essential for achieving optimal design and cost-effective operations in a petroleum processing plant

This book offers engineers working in the energy sector a solid understanding of the phase behavior of the various fluids present in a petroleum reservoir.



Ultronics

Fundamentals, Technologies,
and Applications, *4th Edition*

Dale Ensminger and Leonard Bond

March 4, 2024
ISBN 9780367252816
888 Pages • 147 Color & 231 B/W Illustrations
Subject: Ultrasonics
www.routledge.com/9780367252816

Dale Ensminger

began working at Battelle Memorial Institute in 1948, while still a student at OSU, and worked there until his retirement in January 1988. During his time at Battelle he was active in research in ultrasonics. He was involved in about 1,000 different projects relating to ultrasonics, acoustics and related areas. He also holds many patents related to these projects. He was a member of the Acoustical Society of America, Ultrasonics Industry Association, and the American Society for Nondestructive Testing (ASNT).

Leonard J. Bond

is a Professor at ISU engaged in both research and teaching, including coordinating the Minor in NDE. On July 1st 2022 he became a Professor Emeritus, Aerospace Engineering (ISU), and he continues with some research in both ultrasonics and radiography.



Updated, revised, and restructured to reflect the latest advances in science and applications, the fourth edition of this best-selling industry and research reference covers the fundamental physical acoustics for ultrasonics and transducers, with a focus on piezoelectric and magnetostrictive modalities. It then discusses the full breadth of ultrasonics applications involving low-power (sensing) and high-power (processing) for research, industrial, and medical use.

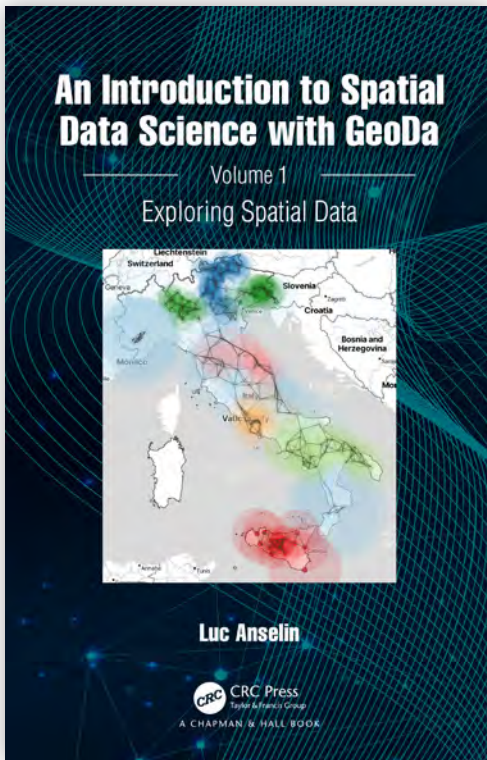
The book includes new content covering computer modelling used for acoustic and elastic waves phenomena, including scattering, mode-conversion, transmission through layered media, Rayleigh and Lamb waves and flexural plates, modern horn design tools, Langevin transducers, and material characterization. There is more attention on process monitoring, advanced NDT/NDE, including phased arrays (PAUT), long-range ultrasonics, using guided waves (GUW), internally rotating systems (IRIS), time-of-flight diffraction (TOFD) and acoustic emission (AE). These methods are discussed applied to both metals and non-metals, using illustrations in various industries, including for food and beverage products. The topics of defect sizing, capabilities, and limitations, including probability of detection (POD), are introduced.

Provides an overview of fundamental analysis and transducer technologies needed to design and develop both measurement and processing systems.

- Considers applications in material characterization and metrology.
- Covers ultrasonic nondestructive testing and evaluation and high-power ultrasonics, which involves interactions that change the state of material.
- Highlights medical and biomedical applications of ultrasound, focusing on the physical acoustics and the technology employed for diagnosis, therapy, surgery, and research.

This book is intended for both the undergraduate and graduate scientist and engineer, as well as the working professional, who seeks to understand the fundamentals, together with a holistic treatment of the field of ultrasonics and its diversity of applications.





An Introduction to Spatial Data Science with GeoDa

Exploring Spatial Data – Volume 1

Luc Anselin

April 19, 2024
ISBN 9781032229188
456 Pages • 339 Color & 26 B/W Illustrations
Subject: Geostatistics
www.routledge.com/9781032229188



Luc Anselin

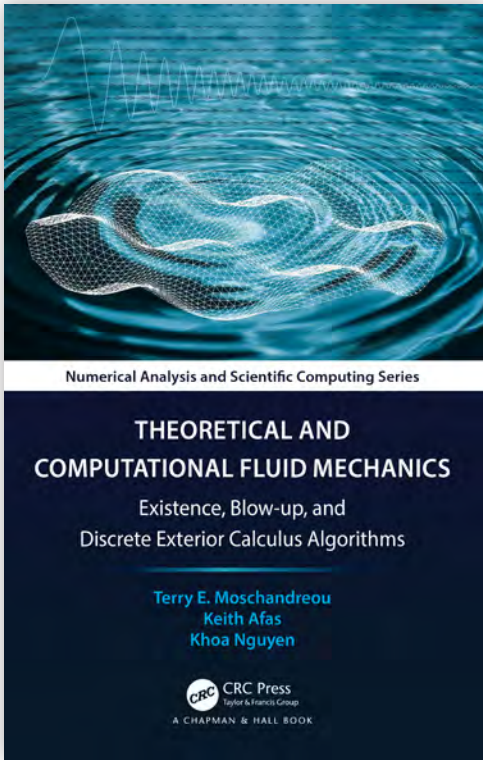
is the Founding Director of the Center for Spatial Data Science at the University of Chicago, where he is also Stein-Freiler Distinguished Service Professor of Sociology and the College, as well as a member of the Committee on Data Science. He is the creator of the GeoDa software and an active contributor to the PySAL Python open source software library for spatial analysis. He has written widely on topics dealing with the methodology of spatial data analysis, including his classic 1988 text on *Spatial Econometrics*. His work has been recognized by many awards, such as his election to the U.S. National Academy of Science and the American Academy of Arts and Science.

This book is the first in a two-volume series that introduces the field of spatial data science. It offers an accessible overview of the methodology of exploratory spatial data analysis. It also constitutes the definitive user's guide for the widely adopted GeoDa open source software for spatial analysis. Leveraging a large number of real-world empirical illustrations, readers will gain an understanding of the main concepts and techniques, using dynamic graphics for thematic mapping, statistical graphing, and, most centrally, the analysis of spatial autocorrelation. Key to this analysis is the concept of local indicators of spatial association, pioneered by the author and recently extended to the analysis of multivariate data.

The focus of the book is on intuitive methods to discover interesting patterns in spatial data. It offers a progression from basic data manipulation through description and exploration, to the identification of clusters and outliers by means of local spatial autocorrelation analysis. A distinctive approach is to spatialize intrinsically non-spatial methods, by means of linking and brushing with a range of map representations, including several that are unique to the GeoDa software. The book also represents the most in-depth treatment of local spatial autocorrelation and its visualization and interpretation by means of GeoDa.

KEY FEATURES:

- Includes spatial perspectives on cluster analysis.
- Focuses on exploring spatial data.
- Supplemented by extensive support with sample data sets and examples on the GeoDaCenter web site. This book is both useful as a reference on the software and as a text for students and researchers of spatial data science.



Theoretical and Computational Fluid Mechanics

Existence, Blow-up, and Discrete Exterior Calculus Algorithms

Terry E. Moschandreou, Keith Afas and Khoa Nguyen

January 26, 2024
ISBN 9781032589251
338 Pages • 39 B/W Illustrations
Subject: Applied Mathematics
www.routledge.com/9781032589251



Dr. Terry Moschandreou

teaches mathematics at the University of Western Ontario in the School of Mathematical and Statistical Sciences.



Mr. Keith Afas

is a graduate researcher at the University of Western Ontario (UWO), who has been engaged in applied mathematics and mathematical modelling research since 2014, leading to multiple first-author and co-author publications, posters, conference presentations, and book chapters in a variety of topics.



Dr. Khoa Nguyen

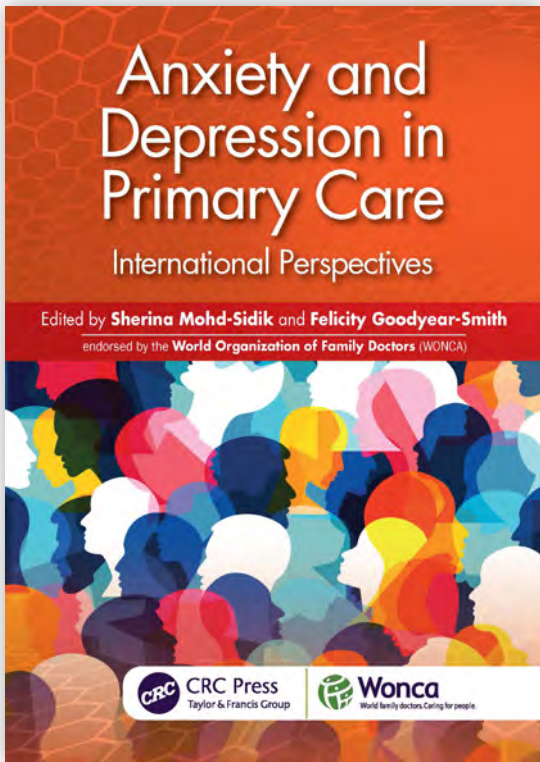
has been teaching applied mathematics at Western University in London, Ontario, Canada since 2001.

Theoretical and Computational Fluid Mechanics centralizes the main and current topics in theoretical and applied fluid dynamics at the intersection of a mathematical and non-mathematical environment. The book is accessible to anyone with a basic level of understanding of fluid dynamics and yet still engaging for those of a deeper understanding.

The book is aimed at theorists and applied mathematicians from a wide range of scientific fields, including the social, health, and physical sciences. It provides a step-by-step guide to the construction of solutions of both elementary and open problems of viscous and non-viscous models, and for the applications of such models for the functional analysis and real analysis of data.

KEY FEATURES:

- Offers a self-contained treatment that does not require a previous background in fluid dynamics.
- Suitable as a reference text for graduate students, researchers, and professionals, and could easily be used as a teaching resource.
- Provides various examples using Maple, Mathematica, and to a lesser extent Matlab programming languages.



Anxiety and Depression in Primary Care

International Perspectives

Edited by Sherina Mohd-Sidik and Felicity Goodyear-Smith

December 29, 2023
ISBN 9781032479514
224 Pages • 14 B/W Illustrations
Subject: General Medicine

www.routledge.com/9781032479514



Sherina Mohd-Sidik

MBBS, MMED (Fam Med), PhD (Community Health) is a family medicine specialist and professor in family medicine at Universiti Putra Malaysia (UPM), Malaysia.



Felicity Goodyear-Smith

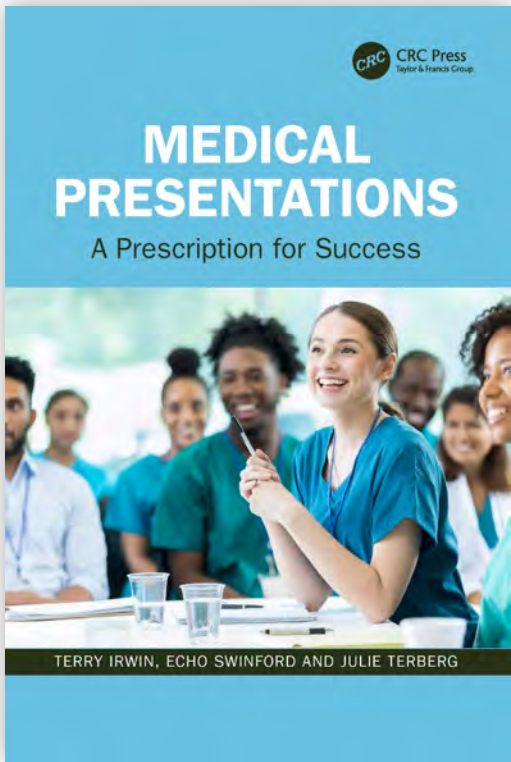
MBChB, MGP, MD, FRNZCGP (Dist) is a general practitioner and professor of general practice and primary health care at The University of Auckland, Auckland, New Zealand.

To ensure the challenges of a wide international primary care community are reflected fully, authors from different world regions – Africa, Asia Pacific, East Mediterranean, Europe, IberoAmericana-CIMF, North America and South Asia – have co-contributed to individual chapters on the detection and management of depression and anxiety in primary care in their own countries, including the screening tools used, how widely these tools are adopted and by whom, and current policies. As well as the medical model, it also presents the alternative viewpoint that feeling low or anxious is part of the human condition and the attention should be on supporting people in their journey through life, struggling to deal with the mainly social challenges they meet, rather than defining these problems as disorders or diseases requiring identification and treatment.

The book addresses primary care detection and management of mental health issues across the globe.

KEY FEATURES:

- Explores the instruments used for the detection of depression and anxiety in primary care in various countries, and why and how these instruments are being used
- Describes the pharmaceutical and non-drug interventions for treating depression and anxiety in primary care and compares the similarities and differences in detecting and managing depression and anxiety in primary care among different countries
- Includes in-depth regional examples of how screening tools are used in practice and how policies can be established in the management of depression and anxiety in primary care
- Concludes with lessons learned from various countries and from different stakeholders with clear advice on what to do and, importantly, what not to do



Medical Presentations

A Prescription for Success

Terry Irwin, Echo Swinford and Julie Terberg

February 7, 2024
ISBN 9781032263526
220 Pages • 161 Color & 2 B/W Illustrations
Subject: General Medicine
www.routledge.com/9781032263526



Terry Irwin

is a retired consultant surgeon based in the UK. He has been an Honorary Lecturer at Queen's University, Belfast for over 20 years, as well as an honorary postgraduate examiner in universities in the UK and overseas.



Julie Terberg

is a designer, author, and speaker based in Michigan, USA. She is the founder of Terberg Design, a creative studio focused on crafting presentations.

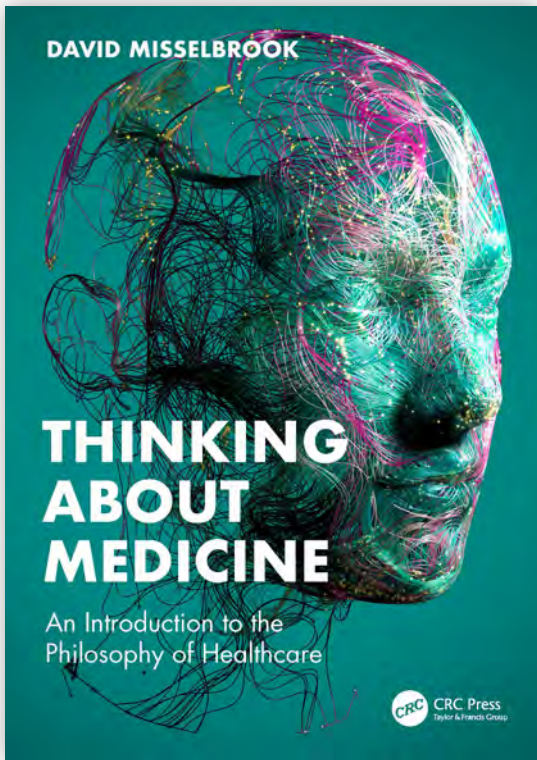


Echo Swinford

holds a master's degree in new media from Indiana University and is the owner of Echosvoice, a PowerPoint consulting firm specializing in custom template development, presentation creation, makeovers and cleanup, and training for large and small corporate clients.

Medical Presentations will teach healthcare professionals how to craft more effective and engaging PowerPoint® presentations, taking readers through the preparation of a presentation from concept to delivery. The book is based on decades of the authors' personal experience teaching PowerPoint® and slide design. The text is based on a sound understanding of educational theory. Readers will learn how to present interesting and visually appealing slides. In particular, the focus will be on designing professional looking slides that convey a clear and memorable message.

The book will be valuable to any healthcare professional required to put together presentations, whether a high-flying academic doctor or nurse presenting their research at international conferences, a trainee giving a talk at an in-house educational session, or a student preparing a presentation as part of their course work.



Thinking About Medicine

An Introduction to the Philosophy of Healthcare

David Misselbrook

May 15, 2024
ISBN 9781032416731
280 Pages • 1 Color & 19 B/W Illustrations
Subject: General Medicine
www.routledge.com/9781032416731



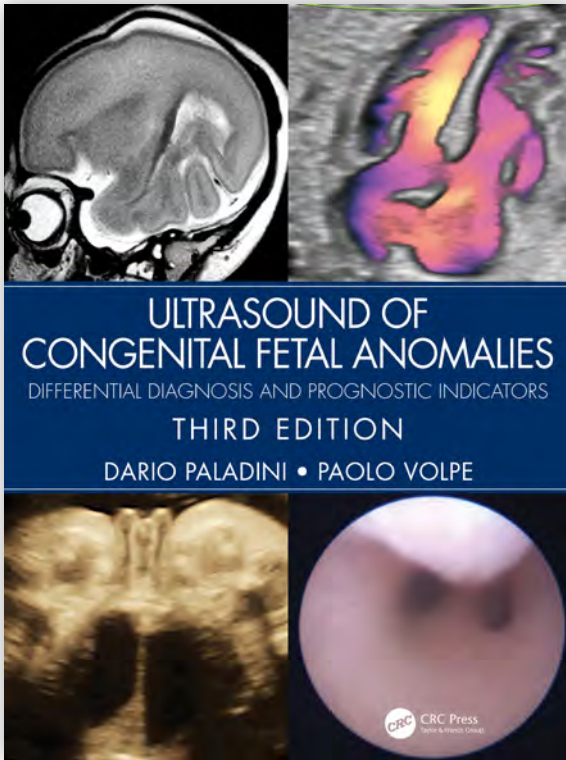
David Misselbrook

was a Lewisham GP for 30 years, a GP Trainer and GPVTS Course Organiser / Program Director. He was Dean of the Royal Society of Medicine, and a President of the Faculty of the History and Philosophy of Medicine at the Society of Apothecaries. He then became Associate Professor of Family Medicine at the Royal College of Surgeons in Ireland (RCSI) Bahrain, where he was the ethics lead for the medical school. He is now semi-retired, with ongoing academic and committee work.

This introduction to the philosophy of medicine surveys the landscape of western philosophy as it pertains to healthcare in an accessible way. Written by a doctor for doctors and other health professionals, framing the 'toolbox' of philosophy within the community of medicine, it encourages examination of the implicit assumptions made in the construction of medical knowledge and practice.

Taking the reader step by step through the concepts that underpin modern philosophy, they will be challenged to reflect upon the premises within clinical practice which might benefit from scrutiny and challenge, including the nature of scientific knowledge, the limits of our biomedical model, the cultural and relational context, and the failure to recognise or manage adequately the fact/value distinction in medicine and healthcare.

The book is an ideal textbook for students of medicine and medical philosophy and will also be of interest to bioethicists, medical sociologists, clinical commissioners and to practicing clinicians in medicine and the allied health professions seeking to improve their understanding of philosophy and ethics and sharpen their critical thinking skills.



Ultrasound of Congenital Fetal Anomalies

Differential Diagnosis and Prognostic Indicators, *3rd Edition*

Dario Paladini and Paolo Volpe

March 6, 2024
ISBN 9780367499501
556 Pages • 550 Color & 334 B/W Illustrations
Subject: Obstetrics, Gynecology & Women's Health
www.routledge.com/9780367499501



Dario Paladini

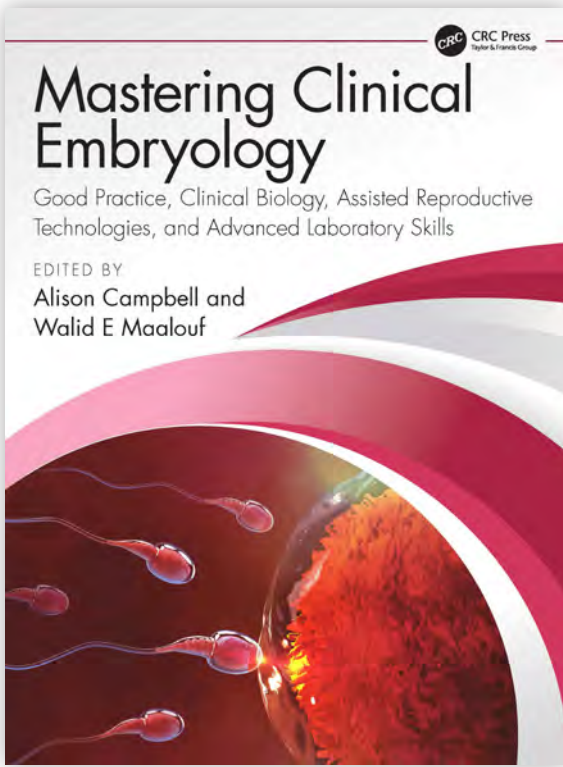
completed his internship at the University Medical school in Naples, Italy. He completed his residency in Obstetrics and Gynecology in 1990 at the Federico II University of Naples. In 1990-94 he moved to the National Cancer Institute of Milan for training in Gynecologic Oncology; he then returned to Naples and joined the faculty as lecturer and, since 2001, as associate professor of obstetrics and gynecology.



Paolo Volpe

is Director of Obstetrics and Gynecology at Ospedale "Di Venere", Carbonara di Bari, Italy.

An acclaimed overview of ultrasound for the prenatal diagnosis of congenital anomalies returns in a new enlarged edition. In particular, the coverage of both Central Nervous System congenital and acquired anomalies as well as Congenital Heart Disease has been expanded enormously, to make this an impressive comprehensive resource for Fetal Neurology and Fetal Cardiology. Together with additional new chapters on guidelines and protocols, equipment, and disorders of sexual differentiation, and new insight into fetal surgery procedures, this third edition almost becomes three books in one.



Mastering Clinical Embryology

Good Practice, Clinical Biology, Assisted Reproductive Technologies, and Advanced Laboratory Skills

Edited by Alison Campbell and Walid E. Maalouf

March 18, 2024
ISBN 9781032216577
280 Pages • 50 Color & 39 B/W Illustrations
Subject: Reproductive Medicine
www.routledge.com/9781032216577



Alison Campbell

PhD, is a Chief Scientific Officer for Care Fertility Group and a Honorary Professor at the University of Kent.



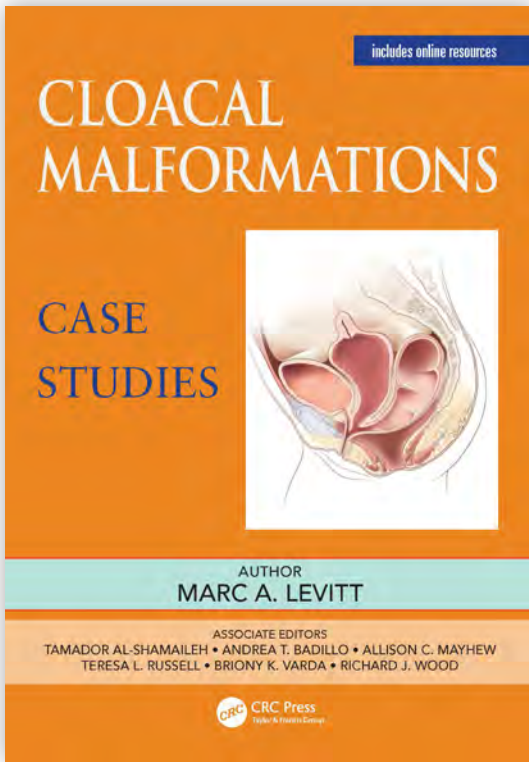
Walid E. Maalouf

MMedSci, PhD is a Senior Scientific Advisor for Vitrolife Group.

Clinical scientists, embryologists, and reproductive technologists, at all levels, as well as trainees and students interested in assisted reproductive technology and reproductive medicine, will find here a clear synopsis of the best laboratory practice, clinical biology, assisted reproduction techniques, and advanced practical skills they will need to know as clinical practitioners. Expert embryologists and trainers contributed to the essential material as well as a number of advanced topics.

KEY FEATURES:

- Offers a clear synopsis of the clinical biology, laboratory skills, and best practice for the trainee embryologist.
- Provides the ideal reference resource for those undertaking postgraduate training to become a clinical embryologist.
- Gives access to the views of expert embryologist and trainers.



Cloacal Malformations: Case Studies

Edited by Marc A. Levitt

February 7, 2024
ISBN 9781032230535
342 Pages • 345 Color & 124 B/W Illustrations
Subject: Surgery
www.routledge.com/9781032230535



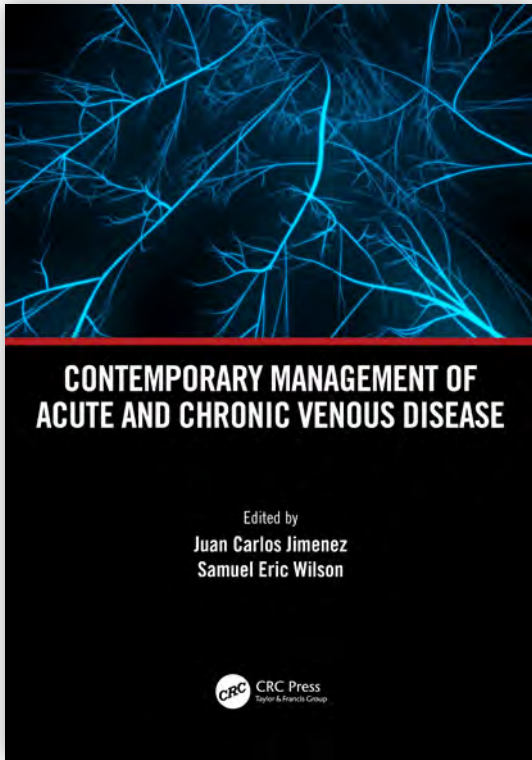
Marc A. Levitt

is actively engaged in helping patients, their doctors, and nurses in resource limited locations through the organization Colorectal Team Overseas, www.ctoverseas.org. He is the Chief of the Division of Colorectal and Pelvic Reconstruction at Children's National Hospital, in Washington DC, a uniquely integrated team of pediatric colorectal surgeons, urologists, gynecologists, gastroenterologists, and nurses and is a Professor of Surgery and Pediatrics at The George Washington University School of Medicine.

Within the field of pediatric colorectal and pelvic reconstruction the most complex anatomic problem a pediatric surgeon can face is that of a cloacal malformation, in which the urinary tract, gynecologic system, and distal bowel all fuse into a single common channel which must be surgically reconstructed. The care of such patients with a cloaca is daunting, and the spectrum of anatomic variations very wide. In this book about cloaca, the authors have brought organization to the complex, providing basic principles of care, from fetal and newborn management to the reconstruction of bowel, gynecologic systems, and urinary tracts as well as their care after surgery to puberty and beyond.

A comprehensive account of all elements of care for the cloaca patient, including pre-operative evaluation and surgical planning, the ARM Index, surgical reconstruction, urological evaluation and long-term care, gynecologic evaluation and intervention, neurological implications, bowel management and the long-term management of patients with cloacal malformations. Case studies provide valuable insights into a range of clinical scenarios, never previously categorized in this way, enabling the reader to understand and gain experience from detailed descriptions. Fully illustrated, in color, and with further resources available online, this is a unique resource for all clinicians within the pediatric team caring for patients with cloacal malformations.

Specialists across numerous fields including colorectal surgery, urology, gynecology, and GI motility, as well as neonatology, orthopedics, neurosurgery, anesthesia, radiology, psychology, social work, nutrition, and nursing, will find this practical clinical text and its online resources to be a invaluable when dealing with the complex needs of the cloaca patient.



Contemporary Management of Acute and Chronic Venous Disease

Edited by Juan Carlos Jimenez and Samuel Eric Wilson

June 16, 2024
ISBN 9781032327747
240 Pages • 60 Color & 37 B/W Illustrations
Subject: Specialist Medicine
www.routledge.com/9781032327747



Juan Carlos Jimenez

MD, MBA, FACS, is a Professor of Surgery, Director, Gonda (Goldschmied) Vascular Center, Division of Vascular Surgery, David Geffen School of Medicine at UCLA, Los Angeles, California.



Samuel Eric Wilson

MD, FACS, is a distinguished Professor of Surgery and Chair Emeritus, University of California Irvine, Irvine, California.

With a focus on evidence based, contemporary and clinically relevant information, this practical new resource provides a concise, clinical, and techniques-focused guide to the medical, endovenous, and surgical management of patients with acute and chronic venous disease.

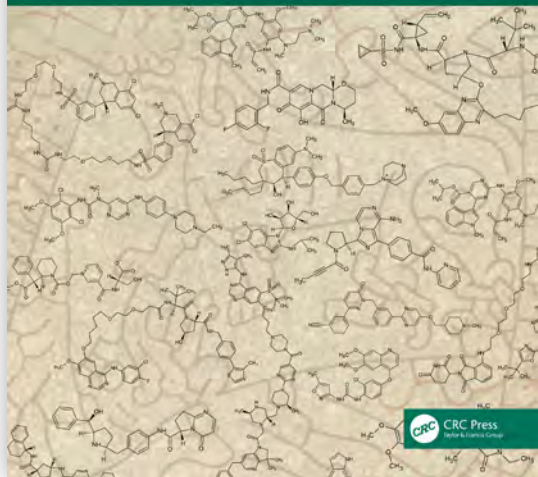
Internationally recognised chapter authors cover the general principles of the pathophysiology, diagnosis, indications and decision making around the management of acute and chronic venous disease. The text emphasises endovenous and surgical techniques where applicable, and also addresses symptomatic peripheral venous insufficiency, deep venous thrombosis, and the care of patients with symptomatic central venous disease.

Vascular surgeons will find this a valuable guide, providing insights into key techniques and approaches to the treatment of acute and chronic venous disorders. This book is an invaluable resource for vascular trainees preparing for examinations, and for physicians in other specialities looking to expand their knowledge base.

Predicting Solubility of New Drugs

Handbook of Critically Curated Data for Pharmaceutical Research

Alex Avdeef



Predicting Solubility of New Drugs

Handbook of Critically Curated Data for Pharmaceutical Research

Alex Avdeef

April 9, 2024
ISBN 9781032617671
2520 Pages • 32 Color & 4071 B/W Illustrations
Subject: Pharmaceutical Science
www.routledge.com/9781032617671



Dr. Alex Avdeef

is an AAPS Fellow since 2014, formerly, a Visiting Senior Research Fellow at King's College London, and the author of Absorption and Drug Development. For nearly 50 years, he has been teaching, researching, and developing methods, instruments, and analysis software for measurement of ionization constants, solubility, dissolution, and permeability of drugs. His accomplishments in the development of instrumentation include several well-known instruments which are or recently have been manufactured by leading companies in the instrument market, including Thermo Fisher Scientific, Sirius Analytical and Pion Inc.

In pharmaceutical research, solubility plays a key part in the assessment of pharmacokinetic risks. Poor drug absorption, reduced efficacy, excessive metabolism and adverse reactions are frequently related to issues of drug solubility. During early discovery research at pharmaceutical companies, many thousands of molecules are considered. Most are rejected due to perceived unfavorable properties. Here the author uses the so-called Wiki-pS0TM database which forms the backbone of this unique handbook. Also discussed is the emerging class of therapeutically-promising research molecules called PROTACs (proteolysis-targeting chimeras), showing a propensity for 'undruggable' targets.

KEY FEATURES:

- Comprehensive and unique listing of measured aqueous intrinsic solubility focusing on drug-like and drug-relevant molecules.
- The database can be used to predict the solubility of research pharmaceutical molecules.
- Includes downloadable files of the database (csv format).
- The mining of the database can result in a better design of solubility assay protocols, leading to better quality of measurements.
- Artificial intelligence and Bayesian statistics will likely be key to this subject area in the future.

GMP AUDITS IN PHARMACEUTICAL AND BIOTECHNOLOGY INDUSTRIES



Mustafa Edik



GMP Audits in Pharmaceutical and Biotechnology Industries

Mustafa Edik

June 13, 2024
ISBN 9781032257303
464 Pages • 2 Color & 52 B/W Illustrations
Subject: Pharmaceutical Science
www.routledge.com/9781032257303



Mustafa Edik

After graduating as a Chemist from university began his 25-year-plus career as a Laboratory Supervisor at Bayer. After 15 years of working as a Quality Assurance Assistant Manager, Laboratory Supervisor, Pharmaceutical Quality Management Systems, and GMP Lead Auditor, he decided to continue his career as a Consultant. He has served the Turkish Atomic Energy Authority (TAEA) as Principal GMP Auditor and Consultant for 6 years.

While he was the Vice President of Quality and Technical Operations at Quality Academia Training and Consultancy firm, he acquired and converted it into a 100 % Turkish Company. As the only IRCA Certificated Pharmaceutical Quality Management Systems and GMP Lead Auditor in Türkiye, he currently conducts API, Excipient, Packaging Materials Suppliers and Manufacturers, Third Party Logistics Service Providers, Sterile and Non-Sterile Manufacturing Facilities Audits according to FDA, EMA, PIC /S, TMMDA, MHRA, TGA Health Canada, and WHO regulations and guidelines.

The fact that GMP audits in the pharmaceutical and biotechnology industries have to be evaluated and with very limited resources has created a gap in this field. The lack of trained and qualified GMP auditors is on the rise in all organizations which are required to implement FDA, EMA, MHRA, WHO, TGA, PIC/S regulations. This volume is an essential reference source for those organizations operating in the field of health and presents the basic knowledge needed to perform audits. The author also provides useful tips and a selection of samples about GMP audits that are indispensable for professionals and health inspectors working in industry and health authorities.

KEY FEATURES:

- An essential reference source for those organizations operating in the field of health and presents the basic knowledge needed to perform audits.
- Anyone working in the manufacturing sector needs to be aware of GMP, be able to identify operational flaws as well as legal violations, and have a clear understanding of how to meet GMP standards.
- Assists the readers in understanding the importance of GMP and how they can apply each aspect in their working environment.
- Covers a global regulatory landscape.
- Suitable for relevant degree courses including industrial pharmaceuticals and pharmaceutical biotechnology
- The book is part of *Drugs and the Pharmaceutical Sciences* series



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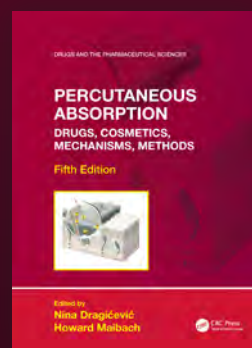
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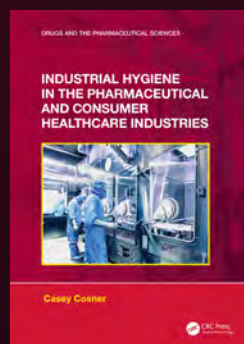
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Biotech Animals in Research

Ethical and Regulatory Aspects

Edited by Mickey Gjerris, Anna Kornum, Helena Röcklinsberg and Dorte Bratbo Sørensen

December 6, 2023
ISBN 9781138369191
232 Pages • 14 Color Illustrations
Subject: Laboratory Animal Science
www.routledge.com/9781138369191



Mickey Gjerris

is an associate professor at the Department of Food and Resource Economics at the University of Copenhagen. He teaches courses for veterinarians, animal researchers and animal caretakers, both at universities and at private companies. He is a former member at the Danish Council on Ethics.



Anna Kornum

has worked as a consultant to several animal protection NGO's and previously as academic associate, working with animal welfare policy and legislation at the Ministry of Justice and later the Ministry of Food, Agriculture and Fisheries.



Helena Röcklinsberg

is an associate professor in ethics and teaches animal ethics at the Swedish University of Agricultural Sciences.



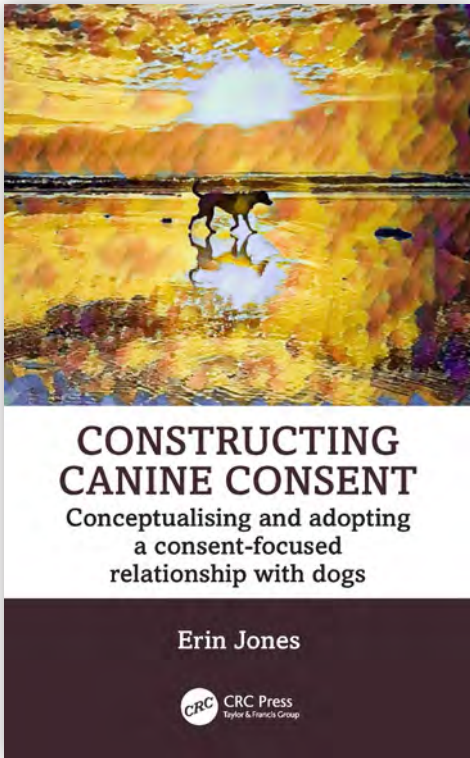
Dorte Bratbo Sørensen

is an associate professor at the Department of Veterinary and Animal Sciences at the University of Copenhagen.

This book explores central aspects of genetic modification of animals for scientific purposes in the context technological possibilities, regulatory issues in different regions, animal welfare implications and wider ethical issues exemplified through current theories and frameworks.

This discussion of lab animals produced through modern biotechnologies becomes increasingly pressing as CRISPR-Cas9 technology advances rapidly, challenging legal and ethical frameworks all over the world. Such animals are now affordable and readily available to almost every branch of scientific research. This not only raises enormous potential for creating 'tailored' models for human diseases but also rubs up against the traditional guiding principles (the 3Rs) for the humane use of animals for scientific experiments and raises wider ethical issues around death, integrity and naturalness. In this book, expert authors from diverse backgrounds in laboratory animal care, animal research, technology and animal rights explore a range of topics, from the science behind biotech research animals and the regulation of their use, to utilitarian, animal rights, virtue ethics and ethics of care, and critical animal studies' perspectives on the use of these technologies.

Whatever your background or role in animal research, this book will challenge and stimulate deeper consideration of the benefits, disadvantages and ethical consequences of the use of biotechnology in the animal laboratory.



Constructing Canine Consent

Conceptualising and Adopting a Consent-Focused Relationship with Dogs

Erin Jones

February 26, 2024
ISBN 9781032421599
144 Pages • 10 Color & 5 B/W Illustrations
Subject: Animal Behaviour
www.routledge.com/9781032421599



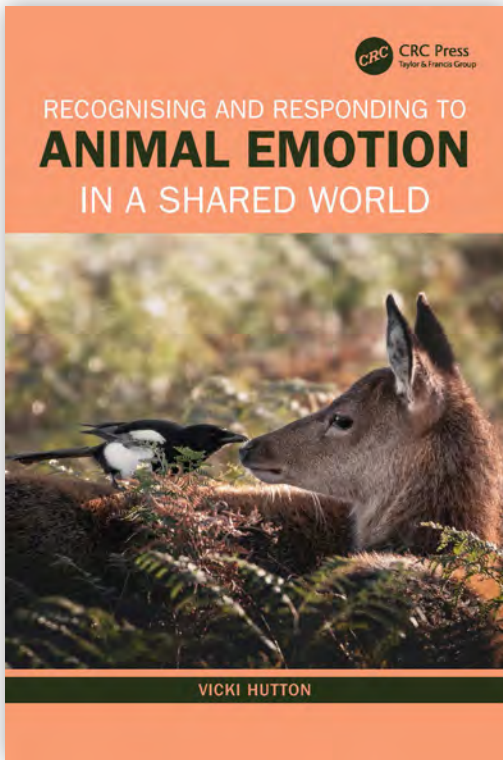
Erin Jones

is a scholar, author, and applied behaviour consultant. Her master's and doctorate research are specifically rooted in Critical Animal Studies. She combines her applied practice as a certified dog trainer and certified dog behaviour consultant with a deeper academic background in how society treats dogs and the entanglement and complexities of multispecies relationships. She has a BSc. in psychology and anthropology from Trent University, Canada, an MSc. in anthrozoology from Canisius University, USA, a PhD in Human-Animal Studies from University of Canterbury- Te Whare Wānanga o Waitaha (at the New Zealand Centre for Human-Animal Studies), and a Pg.Dip. in Animal Welfare from Thompson Rivers University in Canada. She also is a Certified Professional Dog Trainer (CPDT-KA) and Certified Dog Behaviour Consultant (CDBC).

The concept of canine consent is far more than simply a buzzword in modern dog training practices. In its current form, consent is a distinctly human concept, designed by humans and for humans. Looking beyond species boundaries can help us not only consider concepts of canine consent and autonomy, but it can also help us to apply these concepts in our everyday interactions with them: fundamental for any professional working with dogs as well as everyday dog caregivers.

This canine indexed definition of consent includes a model of five major categories: Touch/interaction-based consent, cooperative-care using learned consent behaviours, activity consent, consent-based learning, and substitutive consent. These categories involve a two-way communication system, integration of salient choices, teaching consent behaviours and incorporating existing training protocols that adhere to the Humane Hierarchy of best practices, and an evaluation of dependent decision-making in extenuating circumstances.

This book aims to merge the existing literature and new understandings about canine consent to paint a complete picture. It will challenge the current expectations of dogs and dog behaviour in our society with an intention of considering their perspectives, experiences, and emotional needs. It will be important reading for veterinary professionals, dog trainers and behaviourists, those involved in work with therapy dogs, and anybody working with or caring for dogs.



Recognising and Responding to Animal Emotion in a Shared World

Vicki Hutton

November 16, 2023
ISBN 9781032287782
210 Pages • 49 B/W Illustrations
Subject: Animal Behaviour
www.routledge.com/9781032287782



Vicki Hutton

is passionate about animals and their welfare, having lived with, worked with, observed and written about animals for many years. After starting her career in the health and community sectors as a mental health therapist, crisis counsellor and group facilitator, Vicki moved into education and research while completing her doctorate in Applied Psychology. Vicki has published widely in the human-animal relationship field, as well as the areas of mental health, stigma and discrimination and social cohesion. She currently lives with an assortment of animals who all contribute in their unique ways to her writing.

How is it that depending on the setting, the same cat can be perceived as a homeless annoyance, a potential research subject or a thinking and feeling family member? The answer is bound up in our perception of non-human animals' capacity to experience emotions, and this book draws on contemporary evidence-based research, observations, interviews and anecdotal case scenarios to explore the growing knowledge base around animal emotion. Acknowledging that animals can experience feelings directly affects the way that they are perceived and treated in many settings, and the author explores the implications when humans apply – or ignore – this knowledge selectively between species and within species.

This information is presented within the unique context of a proposed hierarchy of perceived non-human animals' emotional abilities (often based on human interpretation of the animal's emotional capacity), with examples of how this manifests at an emotional, spiritual and moral level. Implications for specific groups living with, caring for or working with non-human animals are examined, making the book of particular interest to those working, studying or researching in the veterinary professions; animal ethics, law and welfare; and zoology, biology and animal science.

This book will also be fascinating reading for anyone interested in simply learning more about the animals with whom we share this planet. For some readers, it will validate the reciprocal emotional bond they feel for living creatures. For others, it will raise questions about the moral treatment of sentient non-human beings, breaking down the human protective barrier of cognitive dissonance and activating a cycle of change.



Promising Antiviral Herbal and Medicinal Plants

Edited by Nadeem Akhtar, Azamal Husen, Vagish Dwibedi and Santosh Kumar Rath

February 14, 2024
ISBN 9781032358802
354 Pages • 42 B/W Illustrations
Subject: Botany & Plant Science
www.routledge.com/9781032358802

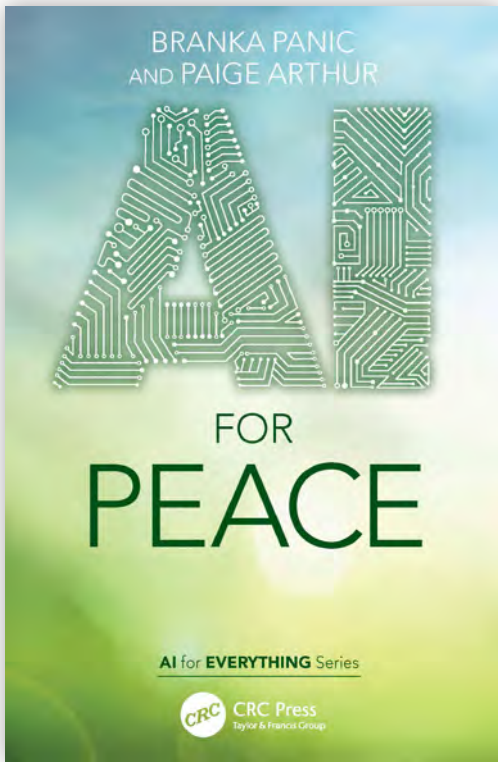
- Nadeem Akhtar**
was a Research Associate at the University of Guelph, Canada, where the objective of his work was to improve companion animals' health in order to promote a superior and more health-conscious lifestyle.
- Azamal Husen**
is a Foreign Delegate at Wolaita Sodo University, Wolaita, Ethiopia.
- Vagish Dwibedi**
is an Assistant Professor at University Institute of Biotechnology, Chandigarh University, Gharuan Mohali, Punjab. Formerly, he was worked as Research Scientist at Agpharm Bioinnovations LLP incubated at Thapar Institute of Engineering & Technology, Patiala, India, Ethiopia.
- Santosh Kumar Rath**
is a medicinal and natural product chemist with more than 10 years of experience in research, academia, and industry. He is working as Assistant Professor at Department of SoPPHI, Faculty of Pharmacy, DIT University, Dehradun, Uttarakhand, India.

With the prevalence of viral diseases causing significant health challenges and the emergence of highly infectious and difficult-to-treat conditions, such as Ebola, HIV/AIDS, and Hepatitis B, there is a pressing need for effective antiviral treatments.

Throughout history, viral infections have caused devastating pandemics, leading to widespread illness and mortality. Notable examples include the Black Death caused by *Yersinia pestis* and the Spanish flu pandemic of 1918. To address this ongoing threat, exploring the potential of herbal and medicinal plants as a source of antiviral compounds is crucial. *Promising Antiviral Herbal and Medicinal Plants* provides a comprehensive overview of the latest research in the field of antiviral properties of herbal and medicinal plants.

KEY FEATURES:

- Compiles cutting-edge research on the antiviral properties of various plants, highlighting their potential therapeutic applications.
- Discusses various chemical components of the medicinal and herbal plants with the known bioactive constituents and their antiviral applications.
- Elaborates on medicinal and herbal plants' opportunities and future direction for drug synthesis against various viral diseases.
- A volume in the *Exploring Medicinal Plants* series, this book is an essential resource for researchers, healthcare professionals, and those interested in viral infections and their management.



AI for Peace

Branka Panic and Paige Arthur

April 19, 2024
ISBN 9781032418377
152 Pages
Subject: AI / Peace Studies

www.routledge.com/9781032418377



Branka Panic

is the Founding Director of AI for Peace, a think tank ensuring that AI benefits peace, security, and sustainable development. Panic is a Fellow at the NYU Center on International Cooperation, Stimson-Microsoft Responsible AI Fellow, a member of UNESCO Women4Ethical AI, and a member of IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems.



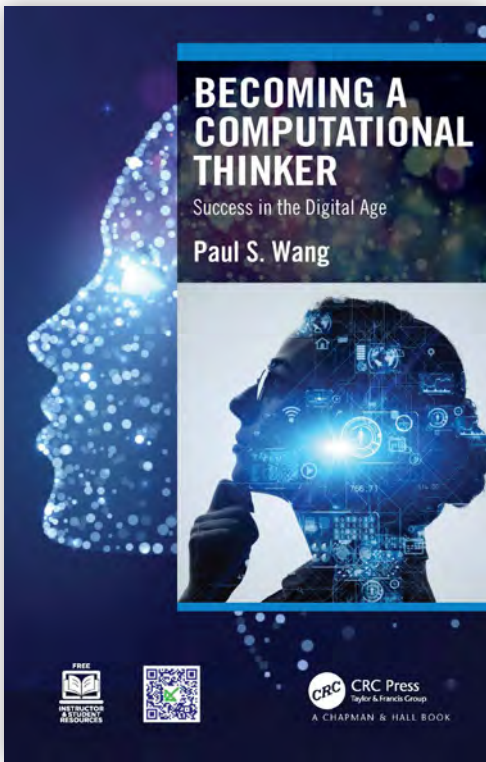
Dr. Paige Arthur

is the Director of Global Programming at Columbia Global (Columbia University, New York). Arthur was formerly a Senior Fellow and Deputy Director of the NYU Center on International Cooperation, where she led the Center's work on conflict prevention and peacebuilding, including a three-year initiative on data-driven approaches to prevention.

The role of artificial intelligence in war is widely recognized—but is there also a role for AI in fostering peace and preventing conflict? *AI for Peace* provides a new perspective on AI as a potential force for good in conflict-affected countries through its uses for early warning, combating hate speech, human rights investigations, and analyzing the effects of climate change on conflict.

Looking at different technologies under the AI umbrella, such as machine learning, natural language processing, and image processing, this book shows how AI can be used to collect and process data, uncover patterns, and augment the work of peacebuilders. It sheds light on multiple examples of data-driven and AI-enabled initiatives across the world work to sustain peace, prevent conflict, and protect human rights. It also explores the risks and emphasizes the importance of embedding ethics in all stages of AI-enabled activities.

An increasingly urgent topic in the peacebuilding field, this book acts as an essential primer for introducing peacebuilders to the latest advancements in emerging technologies and will act as guide for future practice. This book also aims to inspire data scientists to engage in the peacebuilding and prevention field, offering insights into both the opportunities and challenges inherent in this domain, including the specific challenges of applying data science in conflict and fragile settings. The book is also a topical addition to undergraduate and postgraduate courses on digital peacebuilding, peacetechnology, international relations, conflict prevention, tech in development, and humanitarian action.



Becoming a Computational Thinker

Success in the Digital Age

Paul S. Wang

January 9, 2024
ISBN 9781032568997
331 Pages • 187 Color & 50 B/W Illustrations
Subject: Computer Science
www.routledge.com/9781032568997



Paul S. Wang

is an author, computer scientist, researcher, consultant, and academic. He is a Ph.D. and faculty from MIT with over 40 years of experience in teaching and book publishing. His current interest is in introducing Computational Thinking to all the people.

This book has a single purpose: to help everyone become computational thinkers. Computational Thinking (CT) is thinking informed by the digital age, and a computational thinker is someone who can apply that thinking everywhere and anywhere. Through practical examples and easy-to-grasp terminology, this book is a guide to navigating the digital world and improving one's efficiency, productivity, and success immediately.

Given its pervasiveness, knowledge and experience of computation is a cornerstone of productivity, and improved thinking will lead to advances in every aspect of one's life. In this way, CT can be thought of as the mutual reinforcement of thinking and knowledge of computation in the digital age. Comprising a rich collection of self-contained articles that can be read separately, and illustrated by pictures, images and article-end crossword puzzles, this book is an engaging and accessible route to 'Becoming a Computational Thinker' and achieving 'Success in the Digital Age'.

Aimed at the general reader, this book provides insights that can be applied across the full spectrum of industries and practices, helping readers to not only adapt and function in the digital world but also take advantage of new technologies and even innovate new ways doing things.





Data Visualization for People of All Ages

Nancy Organ

April 3, 2024
ISBN 9781032301006
260 Pages • 293 Color & 47 B/W Illustrations
Subject: Data Science
www.routledge.com/9781032301006



Nancy Organ

is a Seattle-based data visualization professional with experience in research, education, and tech, including contributions at Microsoft and the University of Washington. She holds a degree in Statistics from the University of California, Berkeley. Endeavoring to make visualization accessible, fun, and empowering for young people and adults alike, she packs nearly a decade of visualization design experience into one light-hearted book.

Data visualization is the art and science of making information visible. On paper and in our imaginations, it's a language of shapes and colors that hold our best ideas and most important questions. As we find ourselves swimming in data of all kinds, visualization can help us to understand, express, and explore the richness of the world around us. No matter your age or background, this book opens the door to new ways of thinking and sharing through the power of data visualization.

Data Visualization for People of All Ages is a field guide to visual literacy, born from the author's personal experience working with world-class scholars, engineers, and scientists. By walking through the different ways of showing data—including color, angle, position, and length—you'll learn how charts and graphs truly work so that no visualization is ever a mystery or out of reach. It doesn't stop at what fits on a page, either. You'll journey into cutting-edge topics like data sonification and data physicalization, using sound and touch to share data across the different senses. Packed with practical examples and exercises to help you connect the dots, this book will teach you how to create and understand data visualizations on your own—all without writing a single line of code or getting tangled up in software.

Written with accessibility in mind, this book invites everyone to the table to share the joy of one of today's most necessary skills. Perfect for home or classroom use, this friendly companion gives people of all ages everything they need to start visualizing with confidence.





Dimensions of Intelligent Analytics for Smart Digital Health Solutions

Edited by Nilmini Wickramasinghe, Freimut Bodendorf and Mathias Kraus

March 1, 2024
ISBN 9781032699721
452 Pages • 53 B/W Illustrations
Subject: Information Science
www.routledge.com/9781032699721



Nilmini Wickramasinghe

is the Professor and Optus Chair of Digital Health at La Trobe University and the inaugural Professor and Director of Health Informatics Management at Epworth HealthCare.



Freimut Bodendorf

is the Head of the research group Management Intelligence Systems of the Institute of Information Systems at the University of Erlangen-Nürnberg.



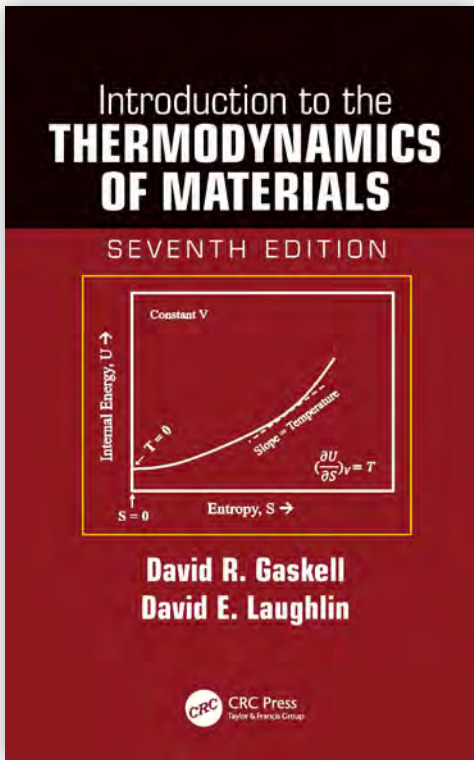
Mathias Kraus

is an Assistant Professor for Data Analytics at the Institute for Information Systems, FAU Erlangen-Nürnberg, where he also heads the White-Box AI research group.

This book demystifies artificial intelligence (AI) and analytics, upskilling individuals (healthcare professionals, hospital managers, consultants, researchers, students, and the population at large) around analytics and AI as it applies to healthcare.

It shows how the tools, techniques, technologies, and tactics around analytics and AI can be best leveraged and utilised to realise a healthcare value proposition of better quality, better access and high value for everyone every day, everywhere. The book presents a triumvirate approach including technical, business and medical aspects of data and analytics and by so doing takes a responsible approach to this key area.

The book serves to introduce the critical issues in AI and analytics for healthcare to students, practitioners, and researchers.



Introduction to the Thermodynamics of Materials

7th Edition

David R. Gaskell and David E. Laughlin

June 14, 2024
ISBN 9781032450995
452 Pages • 53 B/W Illustrations
Subject: Materials Science
www.routledge.com/9781032450995



David R. Gaskell

is a Professor at the Purdue University where he taught until 2013.

David E. Laughlin

is the ALCOA Professor of Physical Metallurgy in the Department of Materials Science and Engineering of CMU and also has a courtesy appointment on the Electrical and Computer Engineering Department

Maintaining the substance that has made *Introduction to the Thermodynamic of Materials* a perennial best seller for decades, this 7th edition is updated to reflect the broadening field of materials science and engineering. Chapters are updated and revised throughout to be more useful and logical for students.

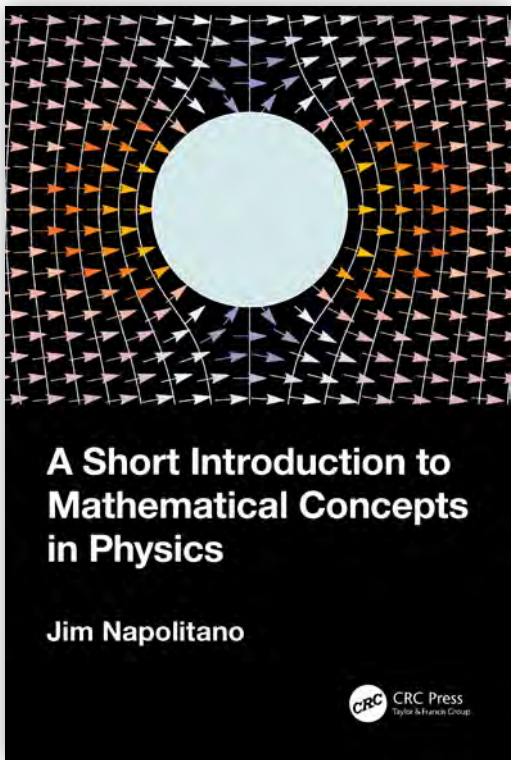
Features worked example problems, a listing of terms and concepts introduced, and a summary section, along with a plethora of new homework problems in each chapter.

Includes more on mathematical and graphical analysis of the various state functions utilized in classical thermodynamics.

Includes a more extensive discussion of the third law of thermodynamics.

Features a new appendix on exact differential equations and mathematical relationships, including all mathematical relations among differentials of homogeneous functions utilized in the text.

Written as the definitive introduction to thermodynamic behavior of materials systems, this text presents the underlying thermodynamic principles of materials and their applications and continues to be the best undergraduate textbook in thermodynamics for materials science students. An updated solutions manual is also available for qualifying adopting professors.



A Short Introduction to Mathematical Concepts in Physics

Jim Napolitano

January 22, 2024
ISBN 9781032404301
242 Pages • 77 B/W Illustrations
Subject: Physics

www.routledge.com/9781032404301



Jim Napolitano

is Professor of Physics at Temple University. His undergraduate degree is in Physics from Rensselaer Polytechnic Institute, and he earned his PhD in Physics at Stanford University. For the first ten years of his career, he was on the staffs at Argonne National Laboratory and Jefferson Laboratory, but has been a Physics faculty member at Rensselaer and Temple for more than 25 years.

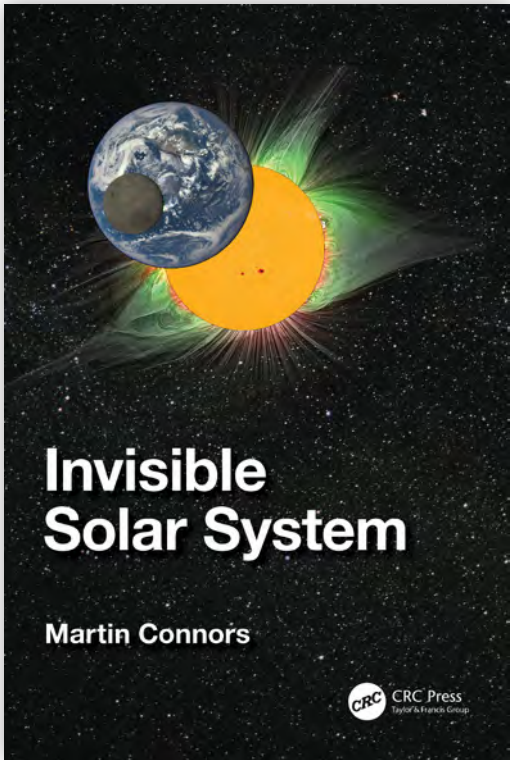
Mathematics is the language of physics and yet, mathematics is an enormous subject. This textbook provides an accessible and concise introduction to mathematical physics for undergraduate students taking a one semester course.

It assumes the reader has studied a year of introductory physics and three semesters of basic calculus, including some vector calculus, but no formal training in differential equations or matrix algebra. It equips readers with the skills and foundational knowledge they need for courses that follow in classical mechanics, electromagnetism, quantum mechanics, and thermal physics.

This book exposes students early on to the kinds of mathematical manipulations they will need in upper-level courses in physics. It can also serve as a useful reference for their further studies.

KEY FEATURES:

- Accompanied by homework problems and a solutions manual for instructors, available upon qualifying course adoption
- Bridges the gap between calculus and physics, explaining fundamental mathematics (differentiation, integration, infinite series) in physical terms
- Explores quick extensions into mathematics useful in physics, not typically taught in math courses, including the Gamma Function, hyperbolic functions, Gaussian integrals, Legendre polynomials, functions of a complex variable, and probability distribution functions



Invisible Solar System

Martin Connors

February 12, 2024
ISBN 9781032587783
320 Pages • 136 Color & 47 B/W Illustrations
Subject: Physics / Astronomy
www.routledge.com/9781032587783



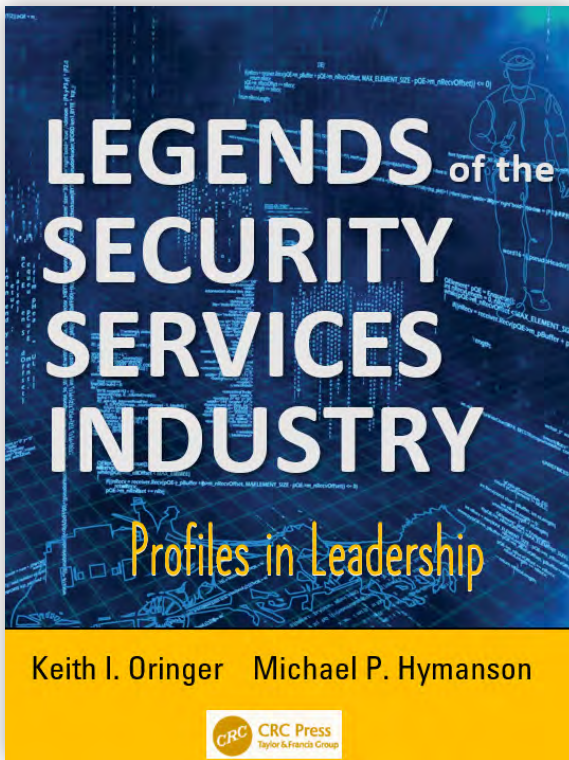
Martin Connors

is a Professor of Astronomy, Mathematics, and Physics at Canada's dominant distance education institution, Athabasca University. He is also affiliated with the planetary science group at Western University in London, Canada. He has authored numerous courses and scientific articles. His wide-ranging research has extended from the history of astronomy, through asteroids and their impact craters, to auroras and their magnetic effects. He has been a visiting professor at UCLA and at Nagoya University in Japan.

When we look at a starry night sky, we are looking out through vast invisible expanses of our own Solar System. The planets, appearing as bright specks, have been revealed as worlds by space missions. However, the invisible spaces between them are equally interesting. Unseen forces, such as the effect of gravity, spiraling magnetic fields, and subatomic particles, originate from the Sun. Celestial bodies too small to see form unexpected patterns, while atoms and nuclei are hidden even if in our own bodies. Weaving the history of discovery with clear explanations, *Invisible Solar System* pulls back the cloak of invisibility under which myriad aspects of the local region of space are connected.

KEY FEATURES:

- Gravity, originally seen as an invisible force, is now revealed as a curvature of spacetime, and, even in its simple form, enables amazing patterns to form.
- The smallest particles have other structures that enable them to interact, powering the present Solar System while also giving clues to nuclear events past and present.
- Long-range forces of electricity and magnetism connect the Sun and planets, dominating the hot plasma gas of space while protecting us from cosmic rays via multiple layers of magnetic shields.



Legends of the Security Services Industry

Profiles in Leadership and Management Success

Keith I. Oringer and Michael P. Hymanson

June 17, 2024
ISBN 9781032259048
320 Pages • 136 Color & 47 B/W Illustrations
Subject: Security Study / Business
www.routledge.com/9781032259048



Keith I. Oringer

is a security industry executive with more than thirty years of experience in the security guard industry. He served in various management roles, including the business unit president, responsible for a \$100 million revenue business unit. Keith then founded Security ProAdvisors, where he continues to serve as president. Keith is a member of ASIS International and Associated Licensed Detectives of New York State (ALDONYS).



Michael P. Hymanson

is a security industry professional with more than forty years' experience in the security guard industry. After graduating from Cornell University with a B.S. in Industrial & Labor Relations, he became a licensed New York State private investigator, starting his security industry career at Pan American Investigation Service, Inc., becoming its president until U.S. Security Associates, Inc. acquired the company. Michael is a long-time member of ASIS International and Associated Licensed Detectives of New York State, where he served as president, chairman, and treasurer.

Legends of the Security Services Industry introduces readers to early pioneers Allan Pinkerton and William Burns, who created the competing Pinkerton's and William J. Burns Detective Agencies dating back to the Civil War era. Despite such humble beginnings, the security guard industry today is comprised of multi-national global companies—the global market being, by some estimates, over \$200 billion globally. Private security is so prominent that the total private industry staffing exceeds public law enforcement.

Each chapter features an individual legend, delving their personal backgrounds, highlighting their personalities, and providing insight into the business acumen and decision-making that led them and their companies to be so successful. All executives managed to increased profits while navigating social turbulence and seismic events—including 9/11, global terrorist attacks, and the COVID-19 pandemic—while maintaining their goal of supporting their employees, managing their reputation, and protecting the public at large. Detailed profiles describe the rise of the major companies, through the uniquely personal and fascinating stories of the business leaders who led them conviction, integrity, and business acumen. Each generation faced very different social and competitive landscapes, and their stories illustrate how they successfully led their companies.

KEY FEATURES:

- Chronicles the origins, advancement, and maturation of the security guard and security services industry through unique personal, biopic narratives
- Presents the unique backgrounds and fascinating stories of industry entrepreneurs to inform and inspire the next generation of future business leaders
- Offers truisms as to what makes successful people successful, by looking at the specific circumstances, initiative, and decisions made by the business leaders to drive innovation and the rapid growth of the industry

CHEMICAL ENGINEERING

Algae in the Bioeconomy



Jean-Luc Wertz, I'USINE, Belgium and Serge Perez

Algae are economically important as a source of crude oil, food and feed, and pharmaceutical and industrial products. Algae in the Bioeconomy provides a detailed overview of the chemical composition of algae and shows that an integrated biorefinery approach is necessary for large-scale algae production, where multiple products are produced. The book serves as a unique compendium of curated knowledge covering the essential features of algae and their applications. It is intended for an interdisciplinary audience in chemical engineering, biotechnology, and environmental science and engineering, promoting research, development, and application of algae as a sustainable resource.

CRC Press

Market: Chemical Engineering and Biotechnology

February 2024: 234x156: 231pp: 150 illus, 60 halftones, 90 line drawings

Hb: 978-1-032-60465-7: **£110.00**

★ For full contents and more information, visit: www.routledge.com/9781032604657

2-Volume Set

Algal Biotechnology



Edited by Nivedita Sahu, CSIR-Indian Institute of Chemical Technology, Telangana, India and S. Sridhar, CSIR-Indian Institute of Chemical Technology, Telangana, India

This two-volume set gives out interdisciplinary expression at present-day practical challenges and recent developments in algal biotechnology with a focus on algal issues and its pertinent applications. It covers algae and the environment, algal-omics, bioremediation using algae, algal biorefinery and industrial trends, algae-based technology to treat industrial effluents and large-scale cultivation for algal bioprocesses. It explains algal biomass as a potential source of biofuel, biofertilizer, bioactive

compounds and phytochemicals. This book is aimed at graduate students and researchers in biotechnology, bioenergy, renewable energy, energy, fuel and petrochemicals, wastewater.

CRC Press

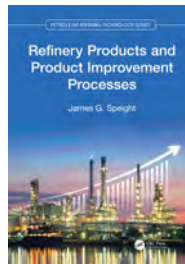
Market: Biotechnology

March 2024: 254x178: 808pp: 157 illus, 74 halftones, 84 line drawings

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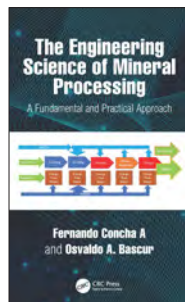
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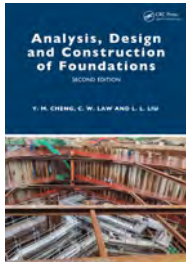
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CRC Press

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Situation Assessment in Aviation new aspects of soft computing technologies for evaluation and assessment of situations in aviation scenarios. It considers using technologies, emerging from: multisensory data fusion (MSDF), Bayesian networks (BN), and fuzzy logic (FL), to assist pilots in their decision-making. The book is intended for aerospace R&D engineers, systems engineers, aeronautical engineers, and aviation training professionals. It will also be useful for aerospace and electrical engineering students taking courses in Air Traffic Management, Aviation Management, Aviation Operations, and Aviation Safety Systems.

Aviation Management, Aviation Operations, and Aviation Safety Systems.

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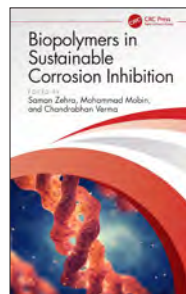
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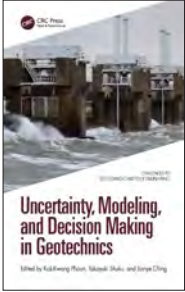
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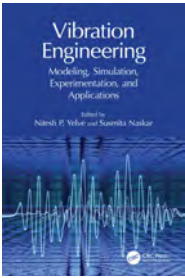
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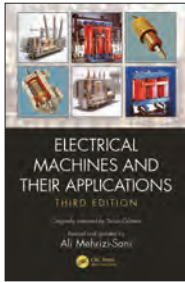
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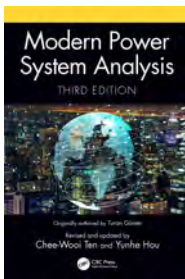
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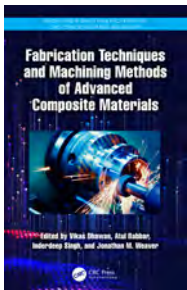
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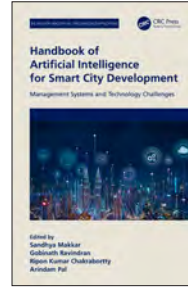
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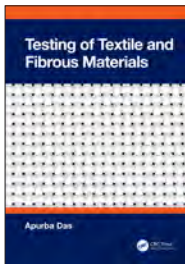
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Apurba Das

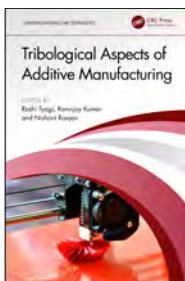
This book contains detailed knowledge about testing principles of fibre, yarn, and fabric characteristics, tensile characteristics of materials and testing of fibrous-composites and technical textiles. It starts with introduction to textile testing and further covers moisture relation with textile materials, sampling techniques for textile materials and the basic applied statistics, fibre characteristics, fibre length, cotton fibre fineness and maturity characteristics. It also deals with the advanced characterisation of cotton fibre by using HVI and AFIS systems. This textbook is aimed at senior undergraduate students in textile testing and evaluation of textile materials.

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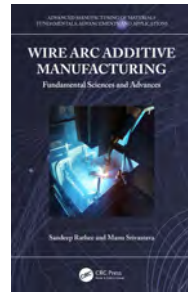
CRC Press

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CRC Press

Market: Occupational Health & Safety

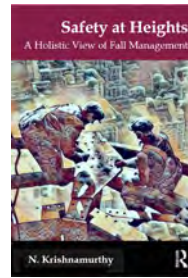
April 2024: 234x156: 360pp: 23 illus, 23 line drawings

Hb: 978-1-032-59048-6: **£110.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032590486

Safety at Height

A Holistic View of Fall Management



Natarajan Krishnamurthy

In this book, Natarajan Krishnamurthy shares his long research and consultancy experience to offer an overview of falls, methods to mitigate them and management techniques to ensure better safety. This book argues that deaths and major injuries from fall accidents could have been prevented by stakeholders knowing more and following guidelines. It looks at the mechanics of falls, accidents in the workplace and lifelines that can be put in place. Featuring exercises at the end of chapters to underpin learning, it concludes with unusual fall situations. Through its pages, you will develop a good understanding of how to prevent falls across a variety of different real-life scenarios.

CRC Press

Market: Occupational Health & Safety

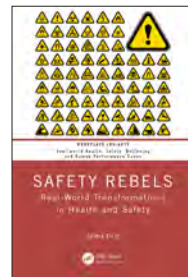
April 2024: 234x156: 168pp: 44 illus, 33 halftones, 11 line drawings

Hb: 978-1-032-61697-1: **£82.99**

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Safety Rebels

Real-World Transformations in Health and Safety



Selma Pirić

Series: Workplace Insights

This book discusses the pragmatic experiences of over 30 safety professionals worldwide who managed to positively transform safety within their organizations. The book details the approaches taken whilst considering the politics and dynamics within each organization, including resistance to change, deteriorating safety statistics, increased number of procedures for operational personnel, high turnover and budget restrictions. This timely and easy-to-read book will appeal to professionals in the field of health and safety.

CRC Press

Market: Occupational Health and Safety

April 2024: 234x156: 144pp: 8 illus, 8 line drawings

Hb: 978-1-032-46754-2: **£110.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032467542



AGRICULTURE

Advanced Nanotechnology in Plants

Methods and Applications



Edited by **Jen-Tsung Chen**

Nanotechnology uses nanomaterials/nanoparticles that can penetrate plant cells and interact with intracellular organelles and metabolites impacting plant growth, development, physiology, and biochemistry. *Advanced Nanotechnology in Plants: Methods and Applications* explores emerging plant nanotechnology, covering advanced methods and applications with an emphasis on the mitigation of plant diseases and environmental stressors. This technology can lead to the improvement of crop quality and yield to face the challenge of global climate change with an expanding global population.

CRC Press

Market: Plant Science

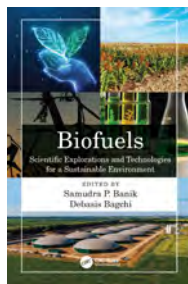
February 2024: 254x178: 312pp: 36 illus, 35 halftones, 1 line drawing

Hb: 978-1-032-42945-8: **£170.00**

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Biofuels

Scientific Explorations and Technologies for a Sustainable Environment



Edited by **Samudra Prosad Banik** and **Debasis Bagchi**

Biofuels are promising eco-friendly renewable energy alternatives, simultaneously curbing the dependence on depleting fossil fuel reserves, reducing the global carbon footprint. However, there have been technological constraints deterring the global-wide scale adoption of biofuel.

Biofuels: Scientific Explorations and Technologies for a Sustainable Environment presents a comprehensive analysis of different types of biofuels.

CRC Press

Market: Environmental Sciences

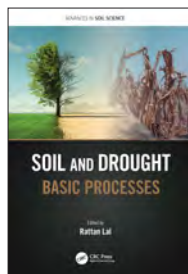
May 2024: 254x178: 600pp: 112 illus, 56 halftones, 56 line drawings

Hb: 978-1-032-39626-2: **£170.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032396262

Soil and Drought

Basic Processes



Edited by **Rattan Lal**, Ohio State University

Series: Advances in Soil Science

This book vividly explains the processes, factors, and causes of drought in soils of agroecosystems. It explains the effects of the climate change on intensity and frequency of agronomic and pedological drought.

CRC Press

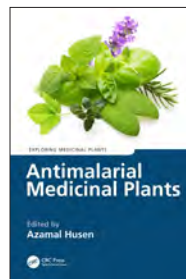
Market: Agriculture

December 2023: 254x178: 306pp: 83 illus, 57 halftones, 26 line drawings

Hb: 978-1-032-28674-7: **£150.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032286747

Antimalarial Medicinal Plants



Edited by **Azamal Husen**, Wolaita Sodo University, Ethiopia

Series: Exploring Medicinal Plants

Antimalarial Medicinal Plants provides information on bioactive compounds and therapeutic potentials of several antimalarial plant species found around the globe. The book evaluates these plant species with respect to their biology, diversity, distribution, and pharmacological values.

CRC Press

Market: Plant Sciences

April 2024: 254x178: 296pp: 38 illus, 24 halftones, 14 line drawings

Hb: 978-1-032-45715-4: **£170.00**

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Managing Soil Drought



Edited by **Rattan Lal**, Ohio State University

Series: Advances in Soil Science

Managing Soil Drought addresses basic processes and provides specific case studies throughout covering protection, restoration, and sustainable management goals of global drylands under changing and harsh climatic conditions, including fragile and vulnerable ecosystems. The book is written by numerous researchers, academicians, practitioners, advocates, land managers, and policy makers involved in bringing about transformation in these regions important to human and nature.

CRC Press

Market: Soil Sciences

March 2024: 254x178: 432pp: 117 illus, 81 halftones, 36 line drawings

Hb: 978-1-032-35240-4: **£170.00**

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CRC Press

Market: Herbal Medicine / Botany

April 2024: 254x178: 368pp: 53 illus, 39 halftones, 14 line drawings

Hb: 978-1-032-46947-8: **£130.00**

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Agricultural, Biosystems, and Biological Engineering Education

Global Perspectives and Current Practice

Edited by **Umezuruike Linus Opara**, Stellenbosch University, South Africa

Series: Contemporary Food Engineering

Providing a comprehensive review of existing approaches to agricultural engineering (AE) education and curriculum reform, this book highlights different models of AE education, including historical development, curriculum design, course contents, industrial training, and graduate attributes. Chapters describe design projects, internships, and capstones; present specific pedagogies and instructional tools for program delivery and evaluation; and discuss emerging issues.

CRC Press

Market: Food Science & Technology

June 2024: 280x210: 528pp: 141 illus, 54 halftones, 87 line drawings

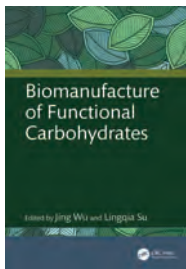
Hb: 978-1-032-48877-6: **£190.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032488776



FOOD SCIENCE & CULLINARY ARTS

Biomanufacture of Functional Carbohydrates



Edited by **Jing Wu** and **Lingqia Su**

This book provides the systemic introduction of biomanufacture of 10 functional carbohydrates. Each chapter introduces the function and application of a functional carbohydrate, then focuses on the recent advancements of the enzymes and catalytic pathways associated with its biosynthesis. It provides the detailed information of the structure and function, molecular modification, and preparation of the relative enzymes, the strategies of preparation of the functional carbohydrates catalyzed by single or complex enzymes and discusses the characteristics of different strategies.

CRC Press

Market: Food Science & Technology

May 2024: 254x178: 392pp: 105 illus, 22 halftones, 83 line drawings

Hb: 978-1-032-43815-3: **£150.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032438153

Food Fortification

Trends and Technologies

Edited by **Khalid Bashir**, **Kulsum Jan**, **Vaibhav Kumar Maurya** and **Amita Shakya**

In a world that is constantly evolving, our understanding of nutrition and its impact on human health has grown exponentially. Food, once merely a source of sustenance, is now recognized as a powerful tool for improving public health and well-being. Organized into four sections, this book presents a comprehensive exploration of food fortification – from its historical roots to its modern applications. It delves into the critical realm of fortifying our food supply to address the complex nutritional challenge, and is a tribute to the progress that has been made in food fortification over the past few decades, as well as a call to action for the work that still lies ahead

CRC Press

Market: Food Science & Technology

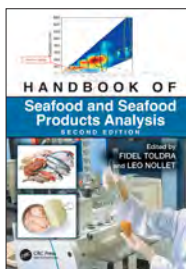
June 2024: 254x178: 408pp: 63 illus, 23 halftones, 40 line drawings

Hb: 978-0-367-72392-7: **£150.00**

★ For **full contents** and more information, visit: www.routledge.com/9780367723927

2nd Edition

Handbook of Seafood and Seafood Products Analysis



Edited by **Fidel Toldrá**, Inst de Agroquímica y Tecnología de Alimentos, Spain and **Leo Nollet**

This 2nd edition of the *Handbook of Seafood and Seafood Products Analysis* brings together the work of 109 experts who focus on the most recent research and development trends in analytical techniques and methodologies for the analysis of captured fresh and preserved seafood, either cultivated or wild, as well as for derived products. After providing a general introduction, this handbook provides 48 chapters distributed in 6 sections.

CRC Press

Market: Food Science & Technology

February 2024: 254x178: 928pp: 104 illus, 46 halftones, 58 line drawings

Hb: 978-1-032-26678-7: **£190.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032266787

Millets

Cultivation, Processing, and Utilization



Ashwani Kumar, Vidisha Tomer, Mukul Kumar and Prince Chawla

Millets: Cultivation, Processing, and Utilization covers information on taxonomy, morphology, germplasm accessions, cultivation practices, harvesting methods, threshing, cleaning, storage, milling, structural and engineering properties, nutritional and anti-nutritional values, health benefits, food applications, by-products, non-food applications, quality standards, and prospects in millet processing. This book will be useful for students, researchers, farmers, and entrepreneurs in understanding millets and their applications. It has been compiled by experts in the field and can serve as a guidance document for the stakeholders.

CRC Press

Market: Food Science & Technology

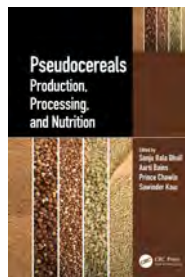
March 2024: 254x178: 316pp: 31 illus, 11 halftones, 20 line drawings

Pb: 978-0-367-70900-6: **£84.99**

★ For **full contents** and more information, visit: www.routledge.com/9780367709006

Pseudocereals

Production, Processing, and Nutrition



Edited by **Sanju Bala Dhull**, Chaudhary Devi Lal University, Haryana, India, **Aarti Bains**, **Prince Chawla**, Shoolini University, Himachal Pradesh, India and **Sawinder Kaur**, School of Agriculture, LPU

Pseudocereals: Production, Processing, and Nutrition provides an overview of the chemistry, processing, and technology of pseudocereals which have become super grains. The cultivation of pseudocereals has spread to over 70 different countries due to its attractive nutritional properties and for food security.

This book discusses necessary information on different pseudocereals as well as practical information on cultivation procedures, equipment, food processing using pseudocereals and use of by-products for bioactive compound extraction. It addresses concerns regarding globalization, food security, climate change and the needs of underdeveloped or developing countries.

CRC Press

Market: Food Science & Technology

March 2024: 234x156: 368pp: 26 illus, 6 halftones, 20 line drawings

Hb: 978-1-032-35096-7: **£150.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032350967

The Art and Science of Dome-Shaped Wood-Fired Ovens

Theory, Building Techniques, Thermal Profiling



Nesimi Ertugrul

Wood fired ovens are extensively used in restaurants and are constructed in backyards all around the world. However, their technical designs and performance using modern analysis tools have been poorly studied. In a scientifically rigorous fashion, this book covers the history, design and construction of wood burning ovens. Burning behavior of wood is explained and a section is dedicated to the types of heat transfers using simplified analogies, to avoid misconceptions that these ovens are only for bread products. In addition, the book presents selected Turkish recipes and fusion cooking techniques.

CRC Press

Market: Food Science & Technology

March 2024: 254x178: 168pp: 84 illus, 62 halftones, 22 line drawings

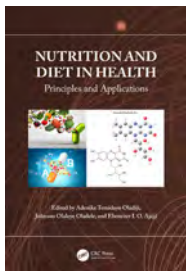
Pb: 978-1-032-62623-9: **£74.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032626239

NUTRITION

Nutrition and Diet in Health

Principles and Applications



Edited by **Adenike Temidayo Oladiji**,
Johnson Olaleye Oladele and **Ebenezer I.O. Ajayi**

Nutrition and diet play a crucial role in sustaining good health throughout human lives. Food provides us with essential nutrients involved in many physiological activities and biological processes in the body including growth and development, metabolism, immune function, and overall well-being. *Nutrition and Diet in Health: Principles and Applications* reviews and discusses the issues related to the roles of nutrition and diets in human health and diseases.

CRC Press

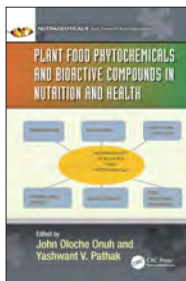
Market: Nutrition

March 2024: 254x178: 290pp: 44 illus, 18 halftones, 26 line drawings

Hb: 978-1-032-42171-1: **£150.00**

★ For full contents and more information, visit: www.routledge.com/9781032421711

Plant Food Phytochemicals and Bioactive Compounds in Nutrition and Health



Edited by **John Oloche Onuh**, Center for Molecular and Translational Medicine, Georgia State University and
Yashwant V. Pathak, USF, USA

Series: *Nutraceuticals*

Food Plant Phytochemicals and Bioactive Compounds in Nutrition and Health provides a comprehensive review of the current state of knowledge in the field of bioactive plant phytochemical compounds, their food sources, bioactivities, bioavailability, extraction, production, and applications. Experts in the field discuss various bioactivities of the notable and promising plant phytochemicals of significance in nutrition and health, e.g., lowering of CVD, hypertension, cholesterol, diabetes, obesity,

inflammation, cancer, oxidative stress, neurodegenerative diseases and a host of other chronic disease conditions.

CRC Press

Market: Food Science & Technology

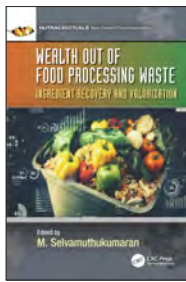
February 2024: 234x156: 676pp: 85 illus, 15 halftones, 70 line drawings

Hb: 978-1-032-37420-8: **£190.00**

★ For full contents and more information, visit: www.routledge.com/9781032374208

Wealth out of Food Processing Waste

Ingredient Recovery and Valorization



Edited by **M. Selvamuthukumar**, Institute of Technology, Haramaya University

Series: *Nutraceuticals*

This book identifies and describes the proper protocols to recover valuable ingredients from waste, thereby creating wealth in society. The effective utilization of waste can generate income for the entrepreneur, lead to more employment for society, enhance fertility of soil, reduce environmental pollution, conserve resources, and help to augment national economy to the greater extent. This book provides food industry personnel, scientists, food engineers, biotechnologists, research scholars, and students with strategies for effective utilization of waste

from various food processing industries.

CRC Press

Market: Food Science & Technology

April 2024: 234x156: 320pp: 36 illus, 13 halftones, 23 line drawings

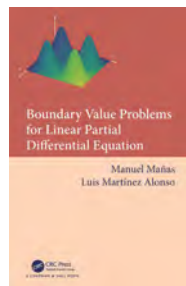
Hb: 978-1-032-21064-3: **£170.00**

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MATHEMATICS

TEXTBOOK

Boundary Value Problems for Linear Partial Differential Equation



Manuel Mañas, Complutense University of Madrid, Spain and **Luis Martínez Alonso**

This book provides students with the opportunity to understand and exercise the benefits of Boundary value problems and initial value problems, equipping them with realistic, practical tools to study solvable linear models of electromagnetism, fluid dynamics, geophysics, optics, thermodynamics and specifically, quantum mechanics. Emphasis is devoted to motivating the use of these methods by means of concrete examples taken from physical models.

Chapman and Hall/CRC

Market: Mathematics

May 2024: 234x156: 456pp: 166 illus, 166 line drawings

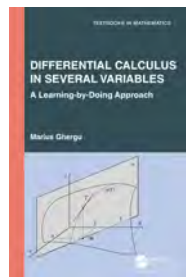
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TEXTBOOK

Differential Calculus in Several Variables

A Learning-by-Doing Approach



Marius Ghergu

Series: *Textbooks in Mathematics*

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Chapman and Hall/CRC

Market: Mathematics

February 2024: 234x156: 324pp: 43 illus, 43 halftones

Hb: 978-1-032-58339-6: **£130.00**

★ For full contents and more information, visit: www.routledge.com/9781032583396

Electronic String Art

Rhythmic Mathematics



Stephen Erfle, Dickinson College/International Business and Management

Series: *AK Peters/CRC Recreational Mathematics Series*

This book invites readers to use the author's digital resources to play with the parameters inherent in string art models, while offering concise, accessible explanations of the underlying mathematical principles regarding how the images were created and how they change. Readers will have the opportunity to create visually beautiful works of art while learning concepts from geometry, number theory, and modular arithmetic from approximately 175 short-interdependent sections.

A K Peters/CRC Press

Market: Mathematics

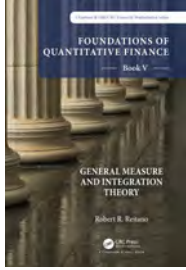
February 2024: 280x210: 352pp: 993 illus, 5 halftones, 988 line drawings

Pb: 978-1-032-51273-0: **£36.99**

★ For full contents and more information, visit: www.routledge.com/9781032512730

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Chapman and Hall/CRC

Market: Financial Mathematics

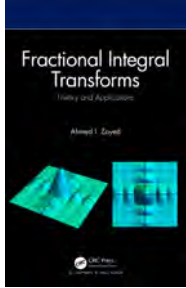
February 2024: 254x178: 208pp

Pb: 978-1-032-20650-9: **£59.99**

★ For full contents and more information, visit: www.routledge.com/9781032206509

Fractional Integral Transforms

Theory and Applications



Ahmad I. Zayed, DePaul University, Chicago, Illinois, USA

This book presents over twenty-five integral transforms, many of which have never before been collected in one single volume. This book provides an overview of the theory of fractional integral transforms with examples of such transforms, before delving deeper into the study of important fractional transforms, including the fractional Fourier transform. Applications of fractional integral transforms in signal processing and optics are highlighted. The book's format has been designed to make it easy for readers to extract the essential information they need to learn about the fundamental properties of each transform. Supporting proofs and explanations are given throughout.

Chapman and Hall/CRC

Market: Mathematics

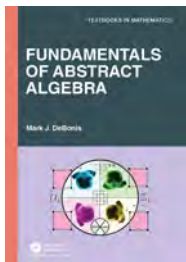
March 2024: 254x178: 278pp: 12 illus, 12 line drawings

Hb: 978-0-367-54387-7: **£115.00**

★ For full contents and more information, visit: www.routledge.com/9780367543877

TEXTBOOK

Fundamentals of Abstract Algebra



Mark J. DeBonis, Manhattan College, USA

Series: *Textbooks in Mathematics*

This is a primary textbook for a one year first course in Abstract Algebra, but it has much more to offer besides this. The book is full of opportunities for further, deeper reading, including explorations of interesting applications and more advanced topics, such as Galois theory. Replete with exercises and examples, the book is geared towards careful pedagogy and accessibility, and requires only minimal prerequisites. The book includes a primer on some basic mathematical concepts that will be useful for readers to understand, and in this sense the book is self-contained.

Chapman and Hall/CRC

Market: Mathematics

April 2024: 254x178: 314pp: 38 illus, 38 line drawings

Pb: 978-1-032-37091-0: **£59.99**

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Set theory can be rigorously and profitably studied through an intuitive approach, thus independently of formal logic. Nearly every branch of Mathematics depends upon set theory and thus knowledge of set theory is of interest to every mathematician. This book is addressed to all mathematicians and tries to convince them that this intuitive approach to axiomatic set theory is not only possible, but also valuable.

Chapman and Hall/CRC

Market: Mathematics

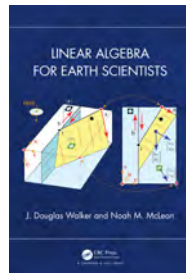
April 2024: 234x156: 368pp

Hb: 978-1-032-58120-0: **£74.99**

★ For full contents and more information, visit: www.routledge.com/9781032581200

TEXTBOOK

Linear Algebra for Earth Scientists



J. Douglas Walker and **Noah M. McLean**

This book is written for undergraduate and graduate students in Earth and Environmental sciences. It is intended to give students enough background in linear algebra to work with systems of equations and data in geology, hydrology, geophysics, or whatever part of the Earth Sciences they engage with. The book does not presuppose any extensive prior knowledge of linear algebra. Instead, the book builds students up from a low base to a working understanding of the subject that they can apply to their work, using many familiar examples in the geosciences.

Chapman and Hall/CRC

Market: Earth Sciences

April 2024: 254x178: 332pp: 115 illus, 115 line drawings

Hb: 978-1-032-55594-2: **£89.99**

★ For full contents and more information, visit: www.routledge.com/9781032555942

TEXTBOOK

Mathematical Methods for Life Sciences



Cinzia Bisi, Ferrara University, Italy
and **Rita Fioresi**, University of Bologna

Mathematical Methods for Life Sciences introduces calculus, and other key mathematical methods, to students from applied sciences (biology, biotechnology, chemistry, pharmacology, material science, etc). Special attention is paid to real-world applications, and for every concept, many concrete examples are provided. The book does not aim to enable students to prove theorems and construct elaborate proofs, but rather to leave students with a clear understanding of the practical mathematics behind the power of optimization, dynamical systems, and all the predictive tools these theories give rise to.

Chapman and Hall/CRC

Market: Mathematics

January 2024: 234x156: 246pp: 63 illus, 63 line drawings

Pb: 978-1-032-38058-2: **£49.99**

★ For full contents and more information, visit: www.routledge.com/9781032380582

TEXTBOOK

Taking the "Oof!" Out of Proofs



Alexandr Draganov

Series: *Textbooks in Mathematics*

This book introduces readers to the art of doing mathematical proofs. Proofs are the glue that holds mathematics together. They make connections between math concepts and show why things work the way they do. This book teaches the art of proofs using familiar high school concepts, such as numbers, polynomials, functions, and trigonometry. It retells math as a story, where the next chapter follows from the previous one.

Chapman and Hall/CRC

Market: Mathematics

April 2024: 234x156: 318pp: 54 illus, 54 halftones

Hb: 978-1-032-59902-1: **£120.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032599021

TEXTBOOK • 3rd Edition

Nonlinear Dynamics and Chaos

With Applications to Physics, Biology, Chemistry, and Engineering



Steven H. Strogatz

The goal of this Third Edition is the same as previous editions: to provide a good foundation for anyone who'd like to learn about nonlinear dynamics and chaos from an applied perspective. Changes to this edition include substantial exercises about conceptual models of climate change, an updated treatment of the SIR model of epidemics, and amendments (based on recent research) about the Selkov model of oscillatory glycolysis. Equations, diagrams, and explanations have been reconsidered and often revised. There are also about 50 new references, many from the recent literature.

Chapman and Hall/CRC

Market: Mathematics

January 2024: 234x156: 588pp

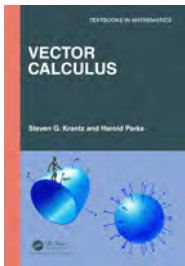
Pb: 978-0-367-02650-9: **£66.99**

Prev. Ed Pb: 978-0-8133-4910-7

★ For **full contents** and more information, visit: www.routledge.com/9780367026509

TEXTBOOK

Vector Calculus



Steven G. Krantz, Washington University, St. Louis, Missouri, USA and **Harold Parks**

Series: *Textbooks in Mathematics*

A calculus book must tell the truth. This book is carefully written in the accepted language of mathematics in a readable exposition. It includes useful and fascinating applications, acquaints students with the history of the subject and offers a sense of what mathematics is all about. Technique is presented, yet so are ideas. The author helps students to master basic methods and how to discover and build their own concepts in a scientific subject. There is an emphasis on using modeling and numerical calculation.

Chapman and Hall/CRC

Market: Mathematics

March 2024: 254x178: 668pp: 345 illus, 345 halftones

Hb: 978-1-032-30266-9: **£99.99**

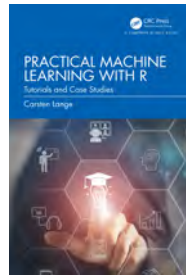
★ For **full contents** and more information, visit: www.routledge.com/9781032302669

PROBABILITY & STATISTICS

TEXTBOOK

Practical Machine Learning with R

Tutorials and Case Studies



Carsten Lange, Professor of Economics, Cal Poly Pomona, USA

This textbook is a comprehensive guide to machine learning and artificial intelligence tailored for students in business and economics. It takes a hands-on approach to teach machine learning, emphasizing practical applications over complex mathematical concepts. Students are not required to have advanced mathematics knowledge such as matrix algebra or calculus. This book is not just a textbook; it is a dynamic learning experience that empowers students and instructors alike with a practical and accessible approach to machine learning in business and economics.

Chapman and Hall/CRC

Market: Statistics

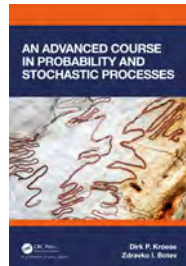
May 2024: 234x156: 368pp: 48 illus, 4 halftones, 44 line drawings

Hb: 978-1-032-43405-6: **£74.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032434056

TEXTBOOK

An Advanced Course in Probability and Stochastic Processes



Dirk P. Kroese, University of Queensland, Australia and **Zdravko Botev**, University of New South Wales, Australia

An Advanced Course in Probability and Stochastic Processes provides a modern and rigorous treatment of probability theory and stochastic processes at an upper undergraduate and graduate level. Starting with the foundations of measure theory, this book introduces the key concepts of probability theory in an accessible way, providing full proofs and extensive examples and illustrations. Fundamental stochastic processes like Gaussian processes, Poisson random measures, Lévy processes, Markov processes, and Itô processes are explored in considerable depth. This book is meant for students and researchers who have a solid

mathematical background.

Chapman and Hall/CRC

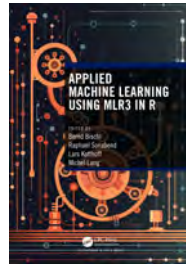
Market: Statistics

December 2023: 254x178: 378pp: 49 illus, 49 line drawings

Hb: 978-1-032-32046-5: **£89.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032320465

Applied Machine Learning Using mlr3 in R



Edited by **Bernd Bischl**, **Raphael Sonabend**, **Lars Kotthoff** and **Michel Lang**

mlr3 is an award-winning ecosystem of R packages that have been developed to enable state-of-the-art machine learning capabilities in R. This book gives an overview of flexible and robust machine learning methods, with an emphasis on how to implement them using mlr3 in R. It covers many key topics, including basic machine learning tasks, such as building and evaluating a predictive model; hyperparameter tuning of machine learning approaches to obtain peak performance; building machine learning pipelines that perform complex operations

Chapman and Hall/CRC

Market: Statistics

January 2024: 254x178: 360pp: 96 illus, 96 line drawings

Pb: 978-1-032-50754-5: **£59.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032507545

TEXTBOOK

Foundations of Data Science with Python



John M. Shea

Series: *Chapman & Hall/CRC The Python Series*

Foundations of Data Science with Python introduces readers to the fundamentals of data science, including data manipulation and visualization, probability, statistics, and dimensionality reduction. This book is targeted toward engineers and scientists, but it should be readily understandable to anyone who knows basic calculus and the essentials of computer programming. This book can be used as an undergraduate textbook for an Introduction to Data Science course or to provide a more contemporary approach in courses like Engineering Statistics. It is also intended to be accessible to practicing engineers and scientists

Chapman and Hall/CRC

Market: Statistics

February 2024: 254x178: 496pp: 205 illus, 7 halftones, 198 line drawings

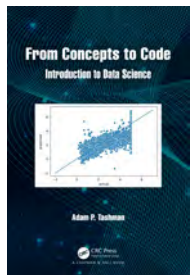
Hb: 978-1-032-34674-8: **£175.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032346748

TEXTBOOK

From Concepts to Code

Introduction to Data Science



Adam P. Tashman

The breadth of problems that can be solved with data science is astonishing, and this book provides the required tools and skills to a broad audience. The reader takes a journey into the forms, uses, and abuses of data and models, and learns how to critically examine each step. Python coding and data analysis skills are built from the ground up, with no prior coding experience assumed. The necessary background in computer science, mathematics, and statistics is provided in an approachable manner. The book leverages content developed by the author for a full-year data science course suitable for advanced high school or early undergraduate students.

Chapman and Hall/CRC

Market: Statistics

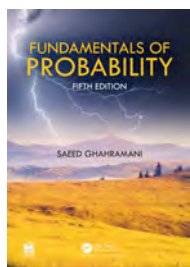
April 2024: 234x156: 400pp: 78 illus, 17 halftones, 61 line drawings

Pb: 978-1-032-51798-8: **£54.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032517988

TEXTBOOK • 5th Edition

Fundamentals of Probability



Saeed Ghahramani, Western New England University, Springfield, Massachusetts, USA

This one- or two-term calculus-based basic probability text is written for majors in mathematics, physical sciences, engineering, statistics, actuarial science, business and finance, operations research, and computer science. It presents probability in a natural way: through interesting and instructive examples and exercises that motivate the theory, definitions, theorems, and methodology. This book is mathematically rigorous and, at the same time, closely matches the historical development of probability. Whenever appropriate, historical remarks are included, and the 2096 examples and exercises have

been designed to arouse curiosity and encourage students to delve into the theory.

Chapman and Hall/CRC

Market: Statistics

May 2024: 254x178: 704pp: 88 illus, 88 line drawings

Hb: 978-1-032-36608-1: **£110.00**

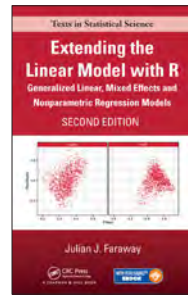
Prev. Ed Hb: 978-1-4987-5509-2

★ For **full contents** and more information, visit: www.routledge.com/9781032366081

TEXTBOOK • 2nd Edition

Extending the Linear Model with R

Generalized Linear, Mixed Effects and Nonparametric Regression Models



Julian J. Faraway, University of Bath, UK

Series: *Chapman & Hall/CRC Texts in Statistical Science*

This second edition of a bestseller takes advantage of the greater functionality now available in R and substantially revises and adds several topics. It expands coverage of binary and binomial responses, incorporates many new sections, and adds a chapter on the Bayesian analysis of mixed effect models. It also revamps the R code throughout and updates the exercises, with solutions now included. The text explains data analysis using real examples and includes all the R commands necessary to reproduce the analyses.

Chapman and Hall/CRC

Market: Statistics

2016: 234x156: 413pp: 115 illus

Hb: 978-1-4987-2096-0: **£84.99**

★ For **full contents** and more information, visit: www.routledge.com/9781498720960

TEXTBOOK • 2nd Edition

Learn R

As a Language



Pedro J. Aphalo, University of Helsinki, Faculty of Biological and Environmental Sciences

Series: *Chapman & Hall/CRC The R Series*

Learning a computer language like R can be either frustrating, fun, or boring. Having fun requires challenges that wake up the learner's curiosity but also provide an emotional reward on overcoming them. This is the second edition of a book designed so that it includes smaller and bigger challenges, in what I call playgrounds, in the hope that all readers will enjoy their path to R fluency.

Chapman and Hall/CRC

Market: Statistics

April 2024: 254x178: 462pp: 191 illus, 191 line drawings

Pb: 978-1-032-51699-8: **£59.99**

Prev. Ed Pb: 978-0-367-18253-3

★ For **full contents** and more information, visit: www.routledge.com/9781032516998

3rd Edition

Multilevel Modeling Using R



W. Holmes Finch, Ball State University, USA and **Jocelyn E. Bolin**, Ball State University, USA

Series: *Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences*

Like its bestselling predecessor, *Multilevel Modeling Using R, Third Edition* provides the reader with a helpful guide to conducting multilevel data modeling using the R software environment. The third edition of the book includes several new topics that were not present in the second edition. Specifically, a new chapter has been included, focussing on fitting multilevel latent variable modeling in the R environment. This updated revision gives the reader state-of-the-art tools to

launch their own investigations in multilevel modeling.

Chapman and Hall/CRC

Market: statistics

April 2024: 234x156: 288pp: 44 illus, 44 line drawings

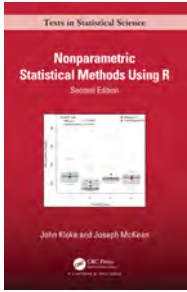
Pb: 978-1-032-36394-3: **£52.99**

Prev. Ed Pb: 978-1-138-48067-4

★ For **full contents** and more information, visit: www.routledge.com/9781032363943

TEXTBOOK • 2nd Edition

Nonparametric Statistical Methods Using R



John Kloke and **Joseph McKean**

Series: *Chapman & Hall/CRC Texts in Statistical Science*

This thoroughly updated and expanded second edition covers traditional nonparametric methods and rank-based analyses. Two new chapters covering multivariate analyses and big data have been added. Core classical nonparametrics chapters on one- and two-sample problems have been expanded to include discussions on ties as well as power and sample size determination. The book is suitable for advanced undergraduate and graduate students in statistics and data science, and students of other majors with a solid background in statistical methods including regression and ANOVA. It will also be of use to researchers working with nonparametric and rank-based methods in practice.

Chapman and Hall/CRC

Market: Statistics

May 2024: 234x156: 480pp: 92 illus, 92 line drawings

Hb: 978-0-367-65135-0: **£66.99**

Prev. Ed Hb: 978-1-4398-7343-4

★ For **full contents** and more information, visit: www.routledge.com/9780367651350

Research Software Engineering

A Guide to the Open Source Ecosystem



Matthias Bannert, KOF Swiss Economic Institute, Zürich, Switzerland

Series: *Chapman & Hall/CRC Data Science Series*

Research Software Engineering: A Guide to the Open Source Ecosystem strives for a big picture overview and to give an understanding of the opportunities of programming as an approach to analytics and statistics. The book argues that a solid, 'programming' skill level is not only well within reach for many but also worth pursuing for researchers and business analysts. Given the pace of the development in data science, many researchers, alongside non-computer science curricula lack a basic software engineering component. This

book provides a dedicated programming-with-data resource to both academic scholars and practitioners.

Chapman and Hall/CRC

Market: Statistics

April 2024: 234x156: 212pp: 35 illus, 14 halftones, 21 line drawings

Pb: 978-1-032-26127-0: **£54.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032261270

Soccer Analytics

An Introduction Using R



Clive Beggs, Leeds Beckett University School of Sport, UK

Series: *Chapman & Hall/CRC Data Science Series*

The book is a comprehensive introduction to soccer analytics aimed at all those interested in analysing soccer data, be they fans, gamblers, coaches, sports scientists, or data scientists and statisticians wishing to pursue a career in professional soccer. It aims to equip the reader with the knowledge and skills required to confidently analyse soccer data using R, all in a few easy lessons.

Chapman and Hall/CRC

Market: Statistics

March 2024: 234x156: 402pp: 63 illus, 63 line drawings

Hb: 978-1-032-35783-6: **£130.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032357836

TEXTBOOK

Spatio-Temporal Models for Ecologists



James Thorson and **Kasper Kristensen**

Series: *Chapman & Hall/CRC Applied Environmental Statistics*

This book seeks to introduce a minimal set of principles and numerical techniques for spatio-temporal statistics that can be used to implement a wide range of real-world ecological analyses regarding animal movement, population dynamics, community composition, causal attribution, and spatial dynamics. Techniques are showcased using real-world data from varied ecological systems, providing a toolset for hierarchical modelling of spatio-temporal processes. *Spatio-Temporal Models for Ecologists* is meant for graduate level students, alongside applied and academic ecologists. Step-by-step illustrations of

techniques using R are provided.

Chapman and Hall/CRC

Market: Statistics

February 2024: 254x178: 296pp: 98 illus, 98 line drawings

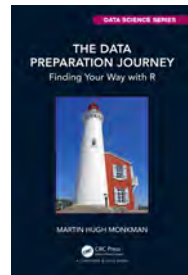
Hb: 978-1-032-53101-4: **£74.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032531014

TEXTBOOK

The Data Preparation Journey

Finding Your Way with R



Martin Hugh Monkman, University of Victoria, Division of Continuing Studies, Canada

Series: *Chapman & Hall/CRC Data Science Series*

This book introduces the principles of data preparation within a systematic approach that follows a typical data science or statistical workflow. This book is designed for readers with a working knowledge of data manipulation functions in R or other programming languages. It is suitable for academics for whom analyzing data is crucial, businesses who make decisions based on the insights gleaned from collecting data from customer interactions, and public servants who use data to inform policy and program decisions. The principles and practices described within *The Data Preparation Journey* apply regardless of the context.

Chapman and Hall/CRC

Market: Statistics

May 2024: 234x156: 248pp: 39 illus, 39 line drawings

Pb: 978-1-032-18975-8: **£52.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032189758

GENERAL MEDICINE

Complaints, Litigation and Clinical Errors

A Practical Guide for Health Care Students and Professionals



Amar Alwitry and Janine Collier

This concise book provides readers with practical guidance to help them to both avoid errors and develop robust processes to protect themselves and their patients, as well as dealing appropriately with complains and litigation, when things do go wrong. Free of complex legal terminology, the book outlines key concepts in medical law and how these may be applied to clinical situations in both hospital and community settings.

CRC Press

Market: Medicine

May 2024: 234x156: 240pp

Pb: 978-1-032-01627-6: **£29.99**

★ For full contents and more information, visit: www.routledge.com/9781032016276

Handbook of Physician Mental Health

Clare Gerada, Royal College of General Practitioners, UK

Drawing together 15 years of expertise in caring for more than 17,000 doctors with mental illness, the book is relevant to any health professional working in clinical practice, and will be essential reading for those who regulate, appraise, train and support health practitioners across a range of disciplines.

Routledge

Market: Medicine

June 2024: 234x156: 200pp: 4 illus, 4 line drawings

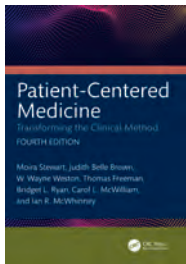
Pb: 978-1-032-47986-6: **£29.99**

★ For full contents and more information, visit: www.routledge.com/9781032479866

4th Edition

Patient-Centered Medicine

Transforming the Clinical Method



Maira Stewart, Western University, London, Canada,
Judith Belle Brown, W. Wayne Weston,
Thomas Freeman, Western University, London, Canada,
Bridget L. Ryan, Western University, London, Canada,
Carol L. McWilliam, Western University, London, Canada
and **Ian R. McWhinney**

Fully revised by its highly experienced author team ensuring wide interest and written for those practising now and for the practitioners of the future, this new edition will be welcomed by a wide international audience comprising all health professionals from medicine, nursing, social work, occupational therapy, physical therapy, pharmacy, veterinary medicine, and other fields.

CRC Press

Market: Medicine

March 2024: 246x174: 360pp: 11 illus, 11 line drawings

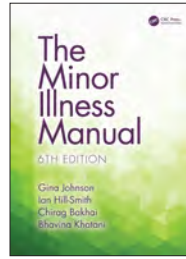
Pb: 978-1-032-48059-6: **£44.99**

Prev. Ed Pb: 978-1-84619-566-2

★ For full contents and more information, visit: www.routledge.com/9781032480596

6th Edition

The Minor Illness Manual



Gina Johnson, National Minor Illness Centre, Luton, UK,
Ian Hill-Smith, National Minor Illness Centre, Luton, UK,
Chirag Bakhai, National Minor Illness Centre, Luton, UK
and **Bhavina Khatani**

This sixth edition of the best-selling *Minor Illness Manual* has been completely revised and updated to include the latest clinical guidance and prescribing information, with a reworked introductory chapter reflecting the changing demands of primary care and a new chapter added on pandemics.

CRC Press

Market: Medicine

April 2024: 280x210: 254pp: 7 illus, 1 halftone, 6 line drawings

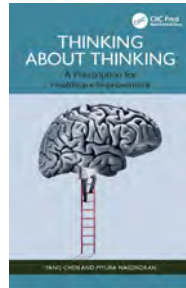
Pb: 978-1-032-54694-0: **£54.99**

Prev. Ed Pb: 978-1-138-49758-0

★ For full contents and more information, visit: www.routledge.com/9781032546940

Thinking About Thinking

A Prescription for Healthcare Improvement



Yang Chen and Myura Nagendran

This book is about the practice of medicine and the decision-making of the people we entrust with our care. Through personal experience, research and feedback from colleagues across healthcare, the authors examine how metacognition – or thinking about thinking – can provide a toolkit with which to improve the decision-making of all healthcare professionals. The rise of digital tools and AI-based clinical support systems makes this a critical time to grasp how human decision-makers operate and how to best harness the increasing volume of healthcare data available.

CRC Press

Market: Medicine

June 2024: 216x138: 240pp: 24 illus, 8 halftones, 16 line drawings

Pb: 978-0-367-34088-9: **£29.99**

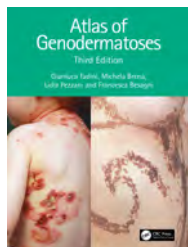
★ For full contents and more information, visit: www.routledge.com/9780367340889



SPECIALIST MEDICINE

3rd Edition

Atlas of Genodermatoses



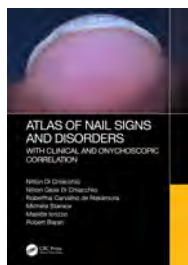
Gianluca Tadini, Istituto di Scienze Dermatologiche, Italy, **Michela Brena**, Istituto di Scienze Dermatologiche, Italy, **Francesca Besagni** and **Lidia Pezzani**

This text presents a comprehensive illustrated overview of almost 200 inherited diseases of the skin, hair, and nails. Examples have been expanded, with new images added to provide clear examples, alongside coherent and comprehensive explanations to enable clinicians to easily identify and source relevant information. The entry for each disease provides background, followed by common characterisations, manifestations, laboratory findings, genetics, cutaneous and extracutaneous findings, differential diagnosis, an overview of complications and recommended follow-ups. In its third edition, this text becomes an invaluable resource for dermatologists and pediatricians.

CRC Press
Market: Dermatology
 March 2024: 280x210: 536pp: 1401 illus, 1397 halftones, 4 line drawings
 Pb: 978-0-367-64397-3: **£170.00**

★ For full contents and more information, visit: www.routledge.com/9780367643973

Atlas of Nail Signs and Disorders with Clinical and Onychoscopic Correlation



Nilton Di Chiacchio, Hospital do Servidor Público Municipal de São Paulo, São Paulo, Brazil, **Nilton Gioia Di Chiacchio**, **Robertha Carvalho de Nakamura**, Instituto di Dermatologia, Santa Casa da Misericordia, Rio de Janeiro, Brazil, **Michela Starace**, University of Bologna, Italy, **Matilde Iorizzo** and **Robert Baran**, Nail Disease Center, Cannes, France

This atlas allows dermatologists and resident and qualified professionals in other disciplines to reach a quick diagnosis, with a wealth of clinical and dermatoscopic images for convenience.

Key features:

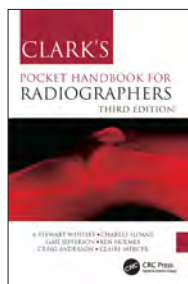
- Provides a quick and straightforward guide to diagnosis for medical professionals.
- Allows residents and professionals in other disciplines to get the essential points rapidly.
- Presents the expertise of some of the most eminent nail specialists internationally.

CRC Press
Market: Dermatology
 March 2024: 254x178: 152pp: 268 illus, 268 halftones
 Hb: 978-1-032-25790-7: **£99.99**

★ For full contents and more information, visit: www.routledge.com/9781032257907

TEXTBOOK • 3rd Edition

Clark's Pocket Handbook for Radiographers



A. Stewart Whitley, UK Radiology Advisory Services, Preston, UK, **Charles Sloane**, University of Cumbria, **Gail Jefferson**, **Ken Holmes**, University of Cumbria and **Craig Anderson**, University of Cumbria

Series: Clark's Companion Essential Guides

Drawn from the renowned reference *Clark's Positioning in Radiography*, this bestselling pocket handbook provides clear and practical advice to help radiographers in their day-to-day work. This third edition has been updated to include new positioning photographs reflecting the dominance of direct digital radiography detectors (DDR), helpful information on the importance of optimisation, exposure factors and geometry in image production, evaluating exposure in digital imaging and aspects of Bariatric Imaging.

CRC Press
Market: Healthcare
 March 2024: 198x129: 286pp: 250 illus, 222 halftones, 28 line drawings
 Pb: 978-1-032-04337-1: **£24.99**

★ For full contents and more information, visit: www.routledge.com/9781032043371

6th Edition

Ernsting's Aviation and Space Medicine

Edited by **David Gradwell**

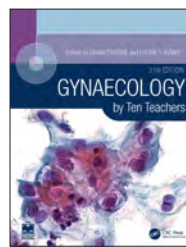
The book applies current understanding in medicine, physiology and the behavioural sciences to the medical challenges and stresses that are faced by both civil and military aircrew, and their passengers, on a daily basis. The sixth edition of this established textbook and clinical reference has been revised and updated by a multi-disciplinary team of experienced contributors, many new to this edition. The structure of the book has been refined, bringing related chapters together where appropriate, while the clinical content has been carefully streamlined in line with the specific requirements of the aviation medicine practitioner and adviser, with new chapters added on Commercial Space Travel, Skin Disease and Women's Health.

CRC Press
Market: Medicine
 May 2024: 280x210: 800pp: 360 illus
 Hb: 978-0-367-47162-0: **£170.00**

Prev. Ed Hb: 978-1-4441-7994-1
 ★ For full contents and more information, visit: www.routledge.com/9780367471620

TEXTBOOK • 21st Edition

Gynaecology by Ten Teachers



Edited by **Emma Crosbie** and **Louise C. Kenny**, Professor of Obstetrics and Gynaecology, University of Cork and Director, The Irish Centre for Fetal and Neonatal Translational Research (INFANT), Cork, Ireland

Gynaecology by Ten Teachers is well established as a concise, yet comprehensive, guide. The 21st edition has been thoroughly updated by an experienced team of 'teachers', integrating clinical material with the latest scientific developments that underpin patient care. Each chapter is highly structured, with learning objectives, definitions, aetiology, clinical features, investigations, treatments, case histories, and key point summaries. Enhanced themes for this edition include 'professionalism' and coverage of medicolegal issues. Accompanying the textbook are interactive EMQs and SBAs for the students to test their understanding of each chapter.

CRC Press
Market: Medicine
 April 2024: 246x189: 284pp: 108 illus, 63 halftones, 45 line drawings
 Pb: 978-1-032-11003-5: **£22.99**

Prev. Ed Pb: 978-1-4987-4428-7
 ★ For full contents and more information, visit: www.routledge.com/9781032110035

3rd Edition

Hair Loss and Restoration



Edited by **Jerry Shapiro**, University of British Columbia, Vancouver, Canada, **Kristen Lo Sicco**, NYU Langone Health, USA, **Nina Otberg**, Humboldt University Berlin, **Donna Cummins**, Salford Royal Hospital, UK and **Hsiao-Han Tuan**, Tsinghua University, China

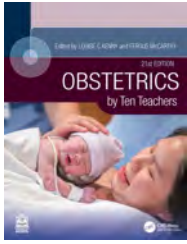
This new edition of an established resource provides an extensive look at the practical management, both medical and surgical, of all forms of hair loss. Proper examination of the patient with hair loss is discussed in depth, as is androgenetic alopecia, the most common cause of hair loss. This compact and easy-to-read book remains a valuable resource for professional training and use.

CRC Press
Market: Cosmetic Dermatology / Plastic Surgery
 May 2024: 254x178: 336pp: 411 illus, 382 halftones, 29 line drawings
 Hb: 978-1-032-38297-5: **£150.00**

Prev. Ed Hb: 978-1-4822-3197-7
 ★ For full contents and more information, visit: www.routledge.com/9781032382975

TEXTBOOK • 21st Edition

Obstetrics by Ten Teachers



Edited by **Louise C. Kenny**, Professor of Obstetrics and Gynaecology, University of Cork and Director, The Irish Centre for Fetal and Neonatal Translational Research (INFANT), Cork, Ireland and **Fergus McCarthy**

Obstetrics by Ten Teachers is well established as a concise, yet comprehensive, guide within its field. The twenty-first edition has been thoroughly updated by its latest team of teachers, integrating clinical material with the latest scientific developments that underpin patient care. Each chapter is highly structured, with learning objectives, definitions, aetiology, clinical features, investigations, treatments and key point summaries and

additional reading where appropriate. A key theme for this edition is 'professionalism' and information specific to this is threaded throughout the text.

CRC Press

Market: Medicine

April 2024: 246x189: 344pp: 148 illus, 46 halftones, 102 line drawings

Hb: 978-1-032-05120-8: **£58.99**

★ For full contents and more information, visit: www.routledge.com/9781032051208

Quality Control in the Assisted Reproductive Technology Laboratory



Durai P., Krishna Institute of Medical Science, Secunderabad, India

Series: Reproductive Medicine and Assisted Reproductive Techniques Series

This guide provides an overview of quality control in ART laboratories. It explores frameworks and essential tools necessary for effective quality management. The fields of monitoring, equipment maintenance, and the intricate aspects of embryo care and cryopreservation are thoroughly examined. The significance of the ART lab witnessing system is highlighted, demonstrating the seamless integration of both manual and electronic witnessing tools. Readers will gain insights into the

roles played by KPIs and SOPs.

CRC Press

Market: Reproductive Medicine

March 2024: 254x178: 192pp: 28 illus, 7 halftones, 21 line drawings

Pb: 978-1-032-62026-8: **£49.99**

★ For full contents and more information, visit: www.routledge.com/9781032620268

3rd Edition

Restorative Techniques in Paediatric Dentistry

An Illustrated Guide to Conventional and Contemporary Approaches



Edited by **M.S. Duggal**, **H. Nazzal** and **A.J. Robertson**

One of the first books on the market to illustrate the various clinical techniques for restoration, this revised and updated new edition offers new material on treatment planning, local analgesia, biomaterials, biological and contemporary approaches, and aesthetic crowns. The book addresses the specific needs of the paediatric patient and helps the clinician manage the restoration with those needs in mind. As a classic volume, it is essential for every dentist working with children and adolescent patients.

CRC Press

Market: Dentistry

May 2024: 246x174: 176pp: 331 illus, 325 halftones, 6 line drawings

Hb: 978-1-032-13230-3: **£150.00**

Prev. Ed Hb: 978-1-85317-592-3

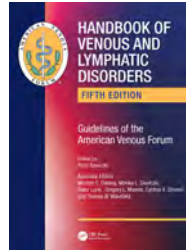
★ For full contents and more information, visit: www.routledge.com/9781032132303

SURGERY

5th Edition

Handbook of Venous and Lymphatic Disorders

Guidelines of the American Venous Forum



Edited by **Peter Gloviczki**, Mayo Clinic, Rochester, MN, USA, Editor-In-Chief, Journal of Vascular Surgery.

Associate Editor **Michael C. Dalsing**, Indiana University School of Medicine, Indianapolis, Indiana,

Monika L. Gloviczki, **Fedor Lurie**, Associate Director, Jobst Vascular Institute, and Adjunct Research Professor, University of Michigan, **Gregory L. Moneta**, **Cynthia Shortell** and **Thomas W. Wakefield**

Written by the world's foremost venous experts, leaders of the American Venous Forum, and international authorities, the

Handbook has become the most important reference for both

day-to-day management and investigation of venous and lymphatic disorders. The 5th edition covers the full spectrum of acute and chronic venous disorders, chronic lymphedema and chylous complications. New or entirely revised chapters discuss in detail basic considerations, diagnostic evaluation, management of acute venous thrombosis and chronic venous disorders, including deep venous disease and venous ulcers.

CRC Press

Market: Surgery

June 2024: 280x210: 850pp: 479 illus, 379 halftones, 100 line drawings

Hb: 978-1-032-35567-2: **£190.00**

Prev. Ed Hb: 978-1-4987-2440-1

★ For full contents and more information, visit: www.routledge.com/9781032355672

Pediatric Abdominal Organ Transplantation

An Introduction and Practical guide



Sergio Assia-Zamora, King's College Hospital, UK and **Nigel Heaton**, King's College Hospital, UK

Pediatric abdominal organ transplantation is a complex procedure that requires a multidisciplinary team. This book highlights the surgical point of view of these transplantations, including the kidney, liver, pancreas, and small bowel. It is intended to deepen the knowledge of these type of transplants for medical students, nurses, doctors, anaesthetists. This book will serve to expand the understanding the general concepts of pediatric abdominal transplantation, indications, surgical procedure, and complications of each type of graft for all multidisciplinary team members.

CRC Press

Market: Medicine

April 2024: 216x138: 130pp: 21 illus, 21 halftones

Pb: 978-1-032-37132-0: **£42.99**

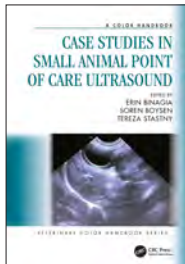
★ For full contents and more information, visit: www.routledge.com/9781032371320



VETERINARY MEDICINE

Case Studies in Small Animal Point of Care Ultrasound

A Color Handbook



Edited by **Erin Binagia**, Michigan State University, **Soren Boysen**, Calgary University and **Tereza Stastny**, Arizona Veterinary, Emergency and Critical Care Centre

Series: *Veterinary Color Handbook Series*

This illustrated practical guide covers the many facets of small animal point of care ultrasound (POCUS) using clinical cases commonly seen in practice. It details specific point of care ultrasound techniques, views, interpretations, pitfalls and knowledge gaps, highlighting the utility initial and serial point of care ultrasound for both diagnostic and patient management purposes. Focusing on commonly asked questions and applications, the authors take a binary question approach to

veterinary POCUS, shown to decrease errors in human POCUS. This is the ideal reference for small animal and mixed practitioners and students.

CRC Press

Market: Veterinary Medicine

February 2024: 254x178: 340pp: 299 illus, 274 halftones, 25 line drawings

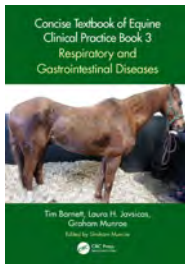
Pb: 978-0-367-54725-7: **£84.99**

★ For full contents and more information, visit: www.routledge.com/9780367547257

TEXTBOOK

Concise Textbook of Equine Clinical Practice Book 3

Respiratory and Gastrointestinal Diseases



Tim Barnett, Rosdals Veterinary Surgeons, **Laura H. Javscas**, Rhinebeck Equine, NY and **Graham Munroe**, Cambridge Veterinary School

This concise, practical text covers the essential information veterinary students and nurses, new graduates and practitioners need to succeed in equine medicine, focussing on respiratory and gastrointestinal diseases. Written for an international readership, the book conveys the core information in an easily digestible, precise form with extensive use of bullet-points, lists, diagrams, protocols and extensive illustration (over 200 full colour, high-quality photographs). The emphasis is on information tailored to general equine students and clinicians

with just enough on advanced techniques to make the practitioner aware of what is available elsewhere.

CRC Press

Market: Veterinary Medicine

January 2024: 254x178: 296pp: 307 illus, 307 halftones, 6 line drawings

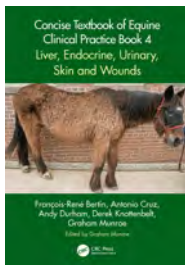
Pb: 978-1-032-06616-5: **£59.99**

★ For full contents and more information, visit: www.routledge.com/9781032066165

TEXTBOOK

Concise Textbook of Equine Clinical Practice Book 4

Liver, Endocrine, Urinary, Skin and Wounds



François-René Bertin, Univ. of Queensland, **Antonio Cruz**, Liphook Equine Hospital, **Andy Durham**, Equine Medical Solutions and **Derek Knottenbelt**, Justus Liebig University Giessen

Edited by **Graham Munroe**, Cambridge Veterinary School

This concise, practical text covers the essential information Equine veterinary students need, focusing on skin, urinary, liver and endocrine diseases. The book conveys the core information in an easily digestible, precise form with extensive use of bullet-points, tables, flow-charts, diagrams, lists, protocols and extensive illustration. Part of a five-book series that extracts and updates key information from *Munroe's Equine Surgery*,

Reproduction and Medicine, Second Edition, the book distils best practice in a logical straightforward clinical-based approach. Ideal for veterinary students, nurses and practitioners needing a quick reference 'on the ground'.

CRC Press

Market: Veterinary Medicine

January 2024: 254x178: 196pp: 215 illus, 215 halftones

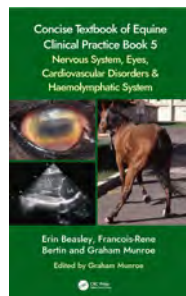
Pb: 978-1-032-06617-2: **£59.99**

★ For full contents and more information, visit: www.routledge.com/9781032066172

TEXTBOOK

Concise Textbook of Equine Clinical Practice Book 5

Nervous System, Eyes, Cardiovascular Disorders and Haemolympathic System



Erin Beasley, Univ. of Georgia, **François-René Bertin**, University of Queensland and **Graham Munroe**, Cambridge Veterinary School

Edited by **Graham Munroe**, Cambridge Veterinary School

This concise, practical text covers the essential information veterinary students need to succeed in Equine medicine and surgery, focusing on the nervous system, eyes, cardiovascular disorders and haemolympathic systems. Part of a five-book series that extracts and updates key information from *Munroe's Equine Surgery, Reproduction and Medicine, Second Edition*, the book distils best practice in a logical straightforward clinical-based approach. Ideal for veterinary students and nurses on clinical placements with horses as well as practitioners needing a quick

reference 'on the ground'. The spiralbound format allows the book to lie open during practice.

CRC Press

Market: Veterinary Medicine

January 2024: 254x178: 224pp: 235 illus, 224 halftones, 11 line drawings

Pb: 978-1-032-58600-7: **£59.99**

★ For full contents and more information, visit: www.routledge.com/9781032586007

Emergency Care for Birds

A Guide for Veterinary Professionals



Rob van Zon

Due to their often small size and unique physical characteristics, birds can deteriorate rapidly in the event of illness and injury. This concise, practical guide will help veterinary professionals to provide first aid and emergency care for birds, as well as to instruct clients on providing basic first aid when they are unable to get to the clinic. It includes guidance for those presented with a moribund, critically ill patient i.e., recognising and treating hypothermia, hypoxia, hypovolaemia and hypoglycaemia. The book also lists of alarming signs of disease and toxic plants, and includes clinical procedures, emergency drug formulary and bandaging techniques.

CRC Press

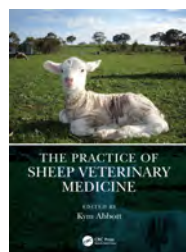
Market: Veterinary Medicine

December 2023: 234x156: 260pp: 151 illus, 151 line drawings

Pb: 978-1-032-31132-6: **£49.99**

★ For full contents and more information, visit: www.routledge.com/9781032311326

Sheep Veterinary Practice



Edited by **Kym Abbott**, The University of Adelaide, Australia

This new edition thoroughly revises and expands on the previous text, adding a review of the systems and strategies available to improve the welfare of sheep in extensive farming systems, a chapter on pain relief, analgesia and anaesthesia for sheep, and a chapter on metacestodes. The text is illustrated with more than 150 full-colour images and photographs.

CRC Press

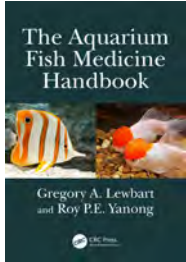
Market: Veterinary Medicine

May 2024: 280x210: 560pp: 158 illus, 96 halftones, 62 line drawings

Pb: 978-1-032-38283-8: **£115.00**

★ For full contents and more information, visit: www.routledge.com/9781032382838

The Aquarium Fish Medicine Handbook



Roy P.E. Yanong, University of Florida, USA
and Gregory A. Lewbart, NC State University, USA

Practicing veterinarians, veterinary technicians, professional aquarists, fish researchers, and tropical fish hobbyists will find this thorough yet concise handbook a complete how-to guide for keeping fish under human care healthy and thriving. The book covers ways to manage aquatic life support systems for fish, history taking, natural history, anatomy, physiology, diagnostic techniques, anesthesia, analgesia, and surgery. Virtually all of the most important ornamental fish pathogens, including viruses, bacteria, fungi, and parasites, are described and richly illustrated.

CRC Press

Market: Veterinary Medicine

April 2024: 229x152: 224pp: 212 illus, 190 halftones, 22 line drawings

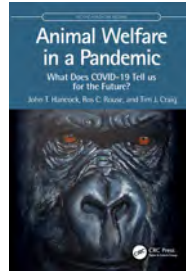
Pb: 978-0-367-52291-9: **£34.99**

★ For full contents and more information, visit: www.routledge.com/9780367522919

BIOLOGY, LIFE & PLANTS SCIENCE

Animal Welfare in a Pandemic

What Does COVID-19 Tell us for the Future?



John T. Hancock, UWE Bristol, Ros C. Rouse, UWE Bristol
and Tim J. Craig, UWE Bristol

Series: *CRC One Health One Welfare*

This book explores the impact of COVID-19 on a wide array of animals, from those in the wild to companion and captive animals. During the height of the pandemic, a range of animals were infected, and many died, but this was hard to predict, even using up-to-date bioinformatics. Some of the vast amount of personal protection equipment (PPE) that was distributed was discarded, creating both dangers and occasional opportunities for wild animals. With the rollout of human vaccines, some countries started to developed animal vaccines, only some of which were deployed.

CRC Press

Market: Animal Welfare

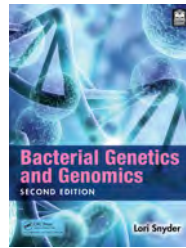
May 2024: 229x152: 232pp: 43 illus, 33 halftones, 10 line drawings

Pb: 978-1-032-52109-1: **£44.99**

★ For full contents and more information, visit: www.routledge.com/9781032521091

TEXTBOOK • 2nd Edition

Bacterial Genetics and Genomics



Lori Snyder

Understanding of bacterial genetics has progressed as genomics has advanced. Genetics and genomics complement each other; they're inseparable. Under novel insights from genetics and genomics, once-believed borders in biology start to fade: knowledge of the bacterial world is being viewed under a new light and concepts are being redefined. This second edition of *Bacterial Genetics and Genomics* has been updated to reflect advances made over the past five years. This includes descriptions for 10 types of secretion systems, bacteria that can be seen with the naked eye, and differences between coupled transcription-translation and uncoupled runaway transcription in bacteria.

Garland Science

Market: Genetics

April 2024: 280x210: 428pp: 420 illus, 23 halftones, 397 line drawings

Pb: 978-1-032-46177-9: **£48.99**

★ For full contents and more information, visit: www.routledge.com/9781032461779

Biosecurity

A Systems Perspective



Edited by Susan M. Hester, UNE Business School, University of New England, Australia, Lucie M. Bland, Edith Arndt, University of Melbourne, Parkville, Australia, Sana Bau, Nathaniel J. Bloomfield, University of Melbourne, Australia, James S. Camac, Raphael Trouve and Andrew P. Robinson

Biosecurity: A Systems Perspective provides an overview of biosecurity as a system of related components, actors and risks. This book — directed to the biosecurity practitioner, generalist scientist and student — introduces overall features of the biosecurity system while walking the reader through the most up-to-date research on each step of the continuum (i.e. pre-border, border and post-border activities). This book, which

explicitly incorporates economic and social dimensions as well as varied decision-making contexts, paves the way for a more systemic approach to biosecurity risk management.

CRC Press

Market: Biosecurity

May 2024: 254x178: 272pp: 47 illus, 4 halftones, 43 line drawings

Hb: 978-1-032-18168-4: **£150.00**

★ For full contents and more information, visit: www.routledge.com/9781032181684

Flipons

The Discovery of Z-DNA and Soft-Wired Genomes

Alan Herbert

Alan Herbert has played a leading part in discovering the biological roles for a high-energy form of DNA twisted to the left rather than to the right. Both Z-DNA and the Z-RNA sensing proteins are critical for protecting hosts against both viruses and cancers. The proteins also play critical roles in the programmed cell death of aging cells. Other types of flipon exist and alter the readout of transcripts from the genome, encoding genetic information by their shape rather than by their sequence. Many of these flipons are within repeat elements that were previously considered to be just genomic junk.

CRC Press

Market: Molecular Biology

May 2024: 234x156: 264pp: 77 illus, 38 halftones, 39 line drawings

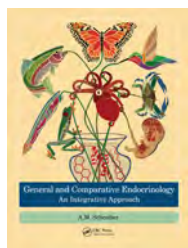
Pb: 978-1-032-73108-7: **£42.99**

★ For full contents and more information, visit: www.routledge.com/9781032731087

TEXTBOOK

General and Comparative Endocrinology

An Integrative Approach



A.M. Schreiber

General and Comparative Endocrinology takes a holistic approach to endocrinology, introducing students to the diverse facets of this interdisciplinary science ranging from the medical to comparative domains, while also exploring evolutionary, environmental, and conservation specializations within the field. This textbook represents the modern field of endocrinology in its totality by addressing topics and recent advances not currently discussed in other introductory endocrinology textbooks.

CRC Press

Market: Endocrinology

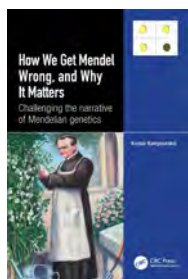
November 2023: 280x210: 677pp: 491 illus, 317 halftones, 174 line drawings

Pb: 978-1-032-41684-7: **£110.00**

★ For full contents and more information, visit: www.routledge.com/9781032416847

How we Get Mendel Wrong, and Why it Matters

Challenging the narrative of Mendelian genetics



Kostas Kampourakis

This book illustrates that the stereotypical representations of Gregor Mendel and his work misrepresent his findings and their historical context. The author sets the historical record straight and provides scientists with a reference guide to the respective scholarship in the early history of genetics. The overarching argument is twofold. On the one hand, that we had better avoid naive hero-worshipping and understand each historical figure, and Mendel in particular, by placing them in the actual sociocultural context in which they lived and worked.

CRC Press

Market: Genetics

December 2023: 234x156: 250pp: 62 illus, 47 halftones, 15 line drawings

Pb: 978-1-032-45690-4: **£44.99**

★ For full contents and more information, visit: www.routledge.com/9781032456904

Marine Greens

Environmental, Agricultural, Industrial and Biomedical Applications



Edited by **Sesan Abiodun Aransiola**, NBDA, Onipanu, **Oluwafemi Adebayo Oyewole**, Federal University of Tech., **Naga Raju Maddela**, Universidad Técnica de Manabí, Ecuador, **Udeme Joshua Josiah Ijah**, Univ. of Jos and **Bangeppagari Manjunatha**

This book provides an in-depth overview of marine greens and their environmental and biotechnological applications. It addresses concepts such as the niche adaptation strategies of marine greens in their natural habitats, as well as their global distribution, and factors affecting their distribution and proliferation. In addition, the book explains the remediation of xenobiotics, wastewater, microplastics, marine debris and marine green contamination. Expert authors from around the world explore the industrial and agricultural applications of marine greens.

CRC Press

Market: Marine Science

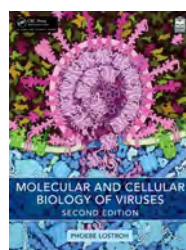
April 2024: 254x178: 288pp: 23 illus, 11 halftones, 12 line drawings

Hb: 978-1-032-43885-6: **£120.00**

★ For full contents and more information, visit: www.routledge.com/9781032438856

TEXTBOOK • 2nd Edition

Molecular and Cellular Biology of Viruses



Phoebe Lostroh, Colorado College, USA

This fully revised second edition of *Molecular and Cellular Biology of Viruses* leads students on an exploration of viruses by supporting interactive learning. All the major classes of viruses are covered, with separate chapters for their replication and expression strategies. Examples come from the most-studied and medically important viruses such as SARS-CoV-2, HIV, and influenza. New to this second edition, a supplementary chapter, freely available for download, looks at how virology intersects with public health, and uses the COVID-19 pandemic as a notable example.

CRC Press

Market: Microbiology

March 2024: 280x210: 550pp: 511 illus, 74 halftones, 437 line drawings

Pb: 978-1-032-73212-1: **£64.99**

★ For full contents and more information, visit: www.routledge.com/9781032732121

Naturally Selective

Evolution, Orgasm, and Female Choice



Robert King

Researchers of human behaviour have identified an 'orgasm gap': Men usually orgasm during intercourse, whereas women often do not. The two leading explanations are either that women are "psychologically broken" - Freud's theory - or badly designed - the "by-product theory." However, evolutionary biology, anatomy, physiology, and direct sex research suggest women have evolved under their own selection pressures and orgasm is a fitness increasing consequence such selective factors. This is revealed in their patterns of orgasmic response, which is not random, nor inexplicable.

CRC Press

Market: Evolution and Reproductive Biology

March 2024: 254x178: 216pp: 5 illus, 5 halftones

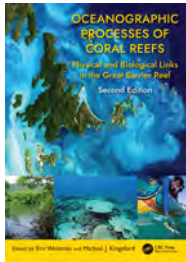
Pb: 978-1-032-44475-8: **£44.99**

★ For full contents and more information, visit: www.routledge.com/9781032444758

2nd Edition

Oceanographic Processes of Coral Reefs

Physical and Biological Links in the Great Barrier Reef



Edited by **Eric Wolanski**, James Cook Univ. and **Michael J. Kingsford**, James Cook Univ.

In the last two decades since publication of the first edition, substantial advancements have been made in the science, the need for transdisciplinary approaches to coral reef protection greater than ever before. The new edition, now in full color throughout, goes beyond identifying foundational information and current problems to pinpoint science-based solutions for managers, stakeholders and policy makers. The chapters provide a much-needed review of the biophysics of reefs with an emphasis on the Great Barrier Reef as an ecosystem. The focus is on interactions between currents, waves, sediment and the

dynamics of coastal and reef-based ecosystems.

CRC Press

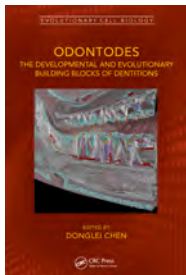
Market: Marine Science

February 2024: 280x210: 492pp: 220 illus, 112 halftones, 108 line drawings

Pb: 978-1-032-34074-6: **£89.99**★ For **full contents** and more information, visit: www.routledge.com/9781032340746

Odontodes

The Developmental and Evolutionary Building Blocks of Dentitions



Edited by **Donglei Chen**

Series: *Evolutionary Cell Biology*

The odontode system, which generates teeth and other structures, is ancient. Among the oldest fossils dating back 500 million years, they play an important role in the anatomy and function of living jawed vertebrates. There is a long history of research on odontodes. Fossils preserve odontode tissues with remarkable nanoscale fidelity. Any synthetic understanding of the evolution and diversification of the odontode system must encompass both 'classic' odontodes (teeth and placoid scales), and less familiar derivatives (ganoine of non-teleost actinopterygians and dentine of chondrichthyan fin spines).

This synthetic volume is an overview of odontode research.

CRC Press

Market: Animal Development

December 2023: 234x156: 376pp: 72 illus, 47 halftones, 25 line drawings

Hb: 978-1-032-06515-1: **£140.00**★ For **full contents** and more information, visit: www.routledge.com/9781032065151

Pesticide Toxicology and Risk Assessment

Linking Exposure to Biological Effects



Edited by **Muneeb U. Rehman**, **Adil Farooq Wali** and **Vani Bajaj**

This book focuses on the need and strategies for safely and efficiently using pesticides. It offers insights from toxicogenomics, enabling an understanding of the genetic and epigenetic factors influencing human susceptibility to chemical toxicity, thereby quantifying their impacts. It facilitates the evaluation of risks linked to both established and innovative pesticides, promoting informed decisions on usage by integrating risk reduction approaches. It serves as a guide for pesticide manufacturers, offering insights into using risk assessment tools to develop secure and effective pesticide blends.

CRC Press

Market: Toxicology

April 2024: 254x178: 296pp: 20 illus, 1 halftone, 19 line drawings

Hb: 978-1-032-10265-8: **£170.00**★ For **full contents** and more information, visit: www.routledge.com/9781032102658

Primates in History, Myth, Art, and Science



Edited by **Cecilia Veracini** and **Bernard Wood**

Primates play a special role in human societies, especially in regions where modern humans and non-human primates co-exist. Non-human primates feature in myths and legends and in traditional indigenous knowledge. Explorers observed them in the wild, and brought them, at great cost, to Europe. There they were valued as pets and for display, and where they were literally teased apart by scientists. The book will be of interest to undergraduate and graduate students as well scholars in disciplines ranging from anthropology to art history.

CRC Press

Market: Life Science

March 2024: 280x210: 344pp: 211 illus, 211 halftones

Hb: 978-1-032-71087-7: **£120.00**★ For **full contents** and more information, visit: www.routledge.com/9781032710877

Seeking Sustainable Development on a Level Playing Field

A PVC Case Study



Mark Everard, UWE Bristol

PVC (polyvinyl chloride) is a plastic with adaptable, durable and other properties used in diverse construction, medical, information technology. Yet, unlike organochlorine pesticides, PVC plastic is inert and recyclable after providing long service life. This book is not 'pro-PVC', but draws on lessons learned from how the PVC value chain, has engaged with problems and made further progress under voluntary commitments to sustainable development. The book advocates a 'level playing field' of common sustainability principles for assessment of the benefits and risks of the use of all materials in the context of whole product life cycles.

CRC Press

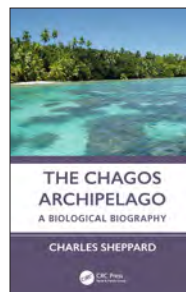
Market: Environmental Science

December 2023: 216x138: 148pp: 13 illus, 5 halftones, 8 line drawings

Pb: 978-1-032-59019-6: **£32.99**★ For **full contents** and more information, visit: www.routledge.com/9781032590196

The Chagos Archipelago

A Biological Biography



Charles Sheppard, University of Warwick, UK

The Chagos Archipelago follows research in a narrative form and anticipates the now substantial Government, UN and legal interest in the Archipelago since the UK was told to 'decolonise', it. With beautiful photography of the Chagos Archipelago coral reefs and islands, as well as graphs indicating their findings, this book offers professionals, researchers, academics and students in Conservation and Biodiversity an insight into one of the worlds most diverse ecosystems. This is also accessible for non-academic readers with an interest in climate change, biodiversity and the importance of conservation.

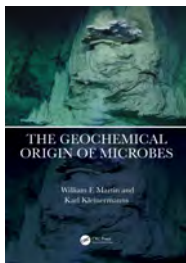
CRC Press

Market: Marine Biology / Oceanography

May 2024: 234x156: 176pp: 65 illus, 55 halftones, 10 line drawings

Hb: 978-1-032-71338-0: **£110.00**★ For **full contents** and more information, visit: www.routledge.com/9781032713380

TEXTBOOK

The Geochemical Origin of Microbes

William F. Martin and Karl Kleinermanns

This textbook covers the transition from energy releasing reactions on the early Earth to energy releasing reactions that fueled growth in the first microbial cells, and is intended for teachers and college students with an interest in microbiology, biochemistry, or evolution. The scope of the book is a quantum departure from existing "origin of life" books in that it starts with basic chemistry and links energy-releasing geochemical processes to the reactions of microbial metabolism.

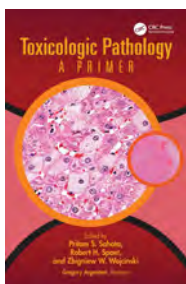
CRC Press

Market: Geochemistry and Microbiology

March 2024: 297x210: 272pp: 182 illus, 48 halftones, 134 line drawings

Pb: 978-1-032-45767-3: **£69.99**★ For full contents and more information, visit: www.routledge.com/9781032457673**Toxicologic Pathology**

A Primer



Edited by **Pritam S. Sahota**, Global ToxPath, LLC, USA, **Robert H. Spaet**, RSPathologies, LLC, USA and **Zbigniew W. Wojcinski**, Toxicology & Pathology Consulting, LLC

Illustrated by **Gregory Argentieri**

Toxicologic Pathology: A Primer is a practical, easy-to-use reference designed to contain core information provided by board-certified veterinary pathologists, all experts in the field. The Primer contains the basic, underlying principles of toxicologic pathology at the introductory level so would not only be valuable to the veterinary pathology student who may be considering a career in the field but could also be a companion to the seasoned toxicologic

pathologist who wants a succinct refresher.

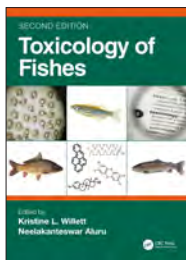
CRC Press

Market: Toxicology

March 2024: 254x178: 448pp: 308 illus, 300 halftones, 8 line drawings

Hb: 978-0-367-36467-0: **£170.00**★ For full contents and more information, visit: www.routledge.com/9780367364670

2nd Edition

Toxicology of Fishes

Edited by **Kristine L. Willett**, Mississippi Univ. and **Neelakanteswar Aluru**, Woods Hole Oceanographic Institution

This up-to-date, comprehensive handbook is devoted to the effects of chemical pollution on humans, animals and the marine environment, covering biochemical and molecular aspects. The new edition is written by recognized experts with increased focus on genomics, delving into the impacts of microplastics, pharmaceuticals and oil spills in dedicated final chapters. With nearly 300 illustrations and Tables, this in-depth reference work presents detailed information on the bioavailability of chemical pollutants, their distribution, metabolism, and excretion in the

host fish and mechanisms and sites of toxic responses.

CRC Press

Market: Life Science

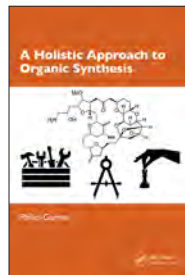
March 2024: 280x210: 480pp: 94 illus, 9 halftones, 85 line drawings

Hb: 978-0-367-74997-2: **£150.00**

Prev. Ed Hb: 978-0-415-24868-6

★ For full contents and more information, visit: www.routledge.com/9780367749972**CHEMISTRY & PHARMACEUTICAL SCIENCE**

TEXTBOOK

A Holistic Approach to Organic Synthesis

Philip Garner

Synthesis is one of the distinguishing features of chemistry as a science. It is the synthetic chemist who uses their intimate understanding of molecular structure and properties to produce materials of great value to society. Thus, it is important for the student of chemistry to study synthesis and acquire a working knowledge that enables them to address the following question - given a specific molecular target, how does one formulate a plan for its synthesis?

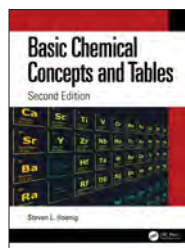
CRC Press

Market: Chemistry

February 2024: 234x156: 184pp: 202 illus, 5 halftones, 197 line drawings

Pb: 978-1-032-43843-6: **£38.99**★ For full contents and more information, visit: www.routledge.com/9781032438436

2nd Edition

Basic Chemical Concepts and Tables

Steven L. Hoenig, American Public University, Charles Town, WV, USA

Fully revised and expanded, the second edition of *Basic Chemical Concepts and Tables* is written as a quick reference to the many different concepts and ideas encountered in chemistry. The volume presents important subjects in a concise format that makes it a practical resource for any reader. Subjects include general chemistry, inorganic chemistry, organic chemistry, and spectral analysis. The new edition includes updated tables that are useful as for the interpretation of ultra-violet (UV), infra-red (IR), nuclear magnetic resonance (NMR) and mass spectroscopy (MS)

spectra, and expanded sections devoted to the concept of isomers and polymer structures.

CRC Press

Market: Chemistry

May 2024: 280x210: 160pp: 96 illus, 3 halftones, 93 line drawings

Pb: 978-1-032-49119-6: **£44.99**

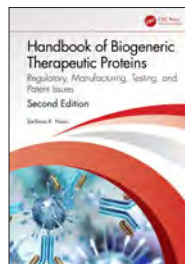
Prev. Ed Pb: 978-0-367-23013-5

★ For full contents and more information, visit: www.routledge.com/9781032491196

2nd Edition

Handbook of Biological Therapeutic Proteins

Regulatory, Manufacturing, Testing, and Patent Issues



Sarfraz K. Niazi, Pharmaceutical Scientist Inc., Deerfield, Illinois, USA

Since 1972 when recombinant engineering was invented, over 500 therapeutic proteins have been approved. Today, biological drugs constitute almost 70% of all new drugs and are of biological origin. The first edition of this book dealt with biosimilars, the second focuses on new drugs yet limits to therapeutic proteins. The newer technologies for development represent the updated topics in the book and include repurposing, AI-driven identification of newer designs, novel expression systems and manufacturing, fast changing regulatory pathways, and legal hurdles. Discusses how to identify, develop, manufacture and take multibillion dollar products to market in the shortest possible time.

CRC Press

Market: Chemistry

April 2024: 254x178: 408pp: 57 illus, 5 halftones, 52 line drawings

Hb: 978-1-032-48960-5: **£150.00**

Prev. Ed Hb: 978-0-8493-2991-3

★ For full contents and more information, visit: www.routledge.com/9781032489605

Molecular Networking

Statistical Mechanics in the Age of AI and Machine Learning



Edited by **Caroline Desgranges**, Research Assistant Professor, UMass Lowell, USA and **Jerome Delhommele**, Associate Professor, UMass Lowell, USA

The book builds on an analogy between social groups and assemblies of molecules to introduce the concepts of statistical mechanics, machine learning and data science. The idea is to bolster students' interest by proposing a new take on the topic that draws on a data analytics approach of molecules.

Specifically, how the analysis of their individual features, as well as of interactions and "communication" processes can predict their properties and collective behavior, just as polling and social networking shed light on the behavior of social groups.

Applications to systems at the cutting-edge of research e.g. environmental and energy applications, will be used.

CRC Press

Market: Chemistry

January 2024: 254x178: 248pp: 99 illus, 22 halftones, 77 line drawings

Hb: 978-0-367-43893-7: **£110.00**

★ For **full contents** and more information, visit: www.routledge.com/9780367438937

Natural Products and Medicinal Properties of Carpathian (Romanian) Plants



Edited by **Adina-Elena Segneanu**, West University of Timisoara, Bld Vasile Parvan nr 4, Timisoara, Timis, Romania, 300223

Series: Natural Products Chemistry of Global Plants

Romanian ethnomedicinal knowledge extends as far back as the 16th century to the Geto-Dacian priests who used medicinal plants and practiced integrated holistic medicine. The ethnomedicine continued in monasteries by monks who used cultivated medicinal plants and wild harvested plants. There are now over 800 species of medicinal plants in Romania.

CRC Press

Market: Chemistry

April 2024: 254x178: 360pp: 190 illus, 190 halftones

Hb: 978-1-032-21908-0: **£150.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032219080

TEXTBOOK

Organic Chemistry

Miracles from Plants

Jeffrey John Deakin

Human benefit from the organic chemistry of plants is incalculable in terms of health, food, comfort and security. Indeed, the future well-being of humanity rests in significant measure upon a responsible relationship with the plant kingdom in order to re-establish balance in the Earth's natural environmental systems. In a highly readable volume, *Organic Chemistry: Miracles from Plants* presents many fascinating points of entry to the organic chemistry of a wide range of crucially-important, naturally-occurring, chemical substances which are derived from plants.

CRC Press

Market: Chemistry

May 2024: 254x178: 264pp: 187 illus, 48 halftones, 139 line drawings

Hb: 978-1-032-66491-0: **£105.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032664910

Perspectives of Quorum Quenching in New Drug Development



Edited by **Naga Raju Maddela**, Universidad Técnica de Manabí, Ecuador, **Venkataramana Thiriveedi**, Duke University, USA and **Lodi Rathna Silviya**, Agricultural Food Science Department, China

Antibiotic resistance in pathogen microorganisms is one of the major global concerns nowadays, especially the formation of biofilms. Quorum quenching has been practically used to control biofilm growth, and this indicates a promising hope for the development of new drugs for control of biofilm forming pathogens. This book provides a single source of information about two issues, including the biology of quorum sensing and quorum quenching and the perspectives of quorum quenching

in new drug development. The text covers the latest literature from the last ten years and insights into quorum quenching and its need in medicine as an anti-virulence strategy.

CRC Press

Market: Pharmaceutical Science

May 2024: 234x156: 288pp: 42 illus, 8 halftones, 34 line drawings

Hb: 978-1-032-28645-7: **£120.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032286457

Purification of Biotechnological Products

A Focus on Industrial Applications



Edited by **Adalberto Pessoa**, University of Sao Paulo, Brazil, **Beatriz Vahan Kilikian** and **Paul Frederick Long**, King's College London, United Kingdom

Series: Drugs and the Pharmaceutical Sciences

This outstanding text focuses on providing professionals and students working in the field of pharmaceutical and biotechnology with the background necessary for development of a product or process and with the necessary rigor required by federal regulatory agencies in the pharmaceutical industry. The material will enable teachers, lecturers and professors in biotechnology to prepare courses on basic concepts and applications for purification of biotechnological products with industrial interest.

CRC Press

Market: Pharmaceutical Science

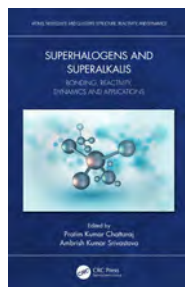
May 2024: 254x178: 500pp: 297 illus, 17 halftones, 280 line drawings

Hb: 978-1-032-70424-1: **£150.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032704241

Superhalogens and Superalkalis

Bonding, Reactivity, Dynamics and Applications



Edited by **Pratim Kumar Chattaraj**, Indian Institute of Technology Kharagpur Kharagpur, India and **Ambrish Kumar Srivastava**, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur, India

Series: Atoms, Molecules, and Clusters

This comprehensive volume is designed as the go-to resource on the exciting and evolving topics of superhalogens, superalkalis and supersalts—special classes of atomic clusters and the acid salt that results from their interactions. The book details how these substances possess not only unusual structures, but also unique properties which can be exploited for various applications. For instance, superhalogens possess strong oxidizing capacity due to their high electron affinity.

CRC Press

Market: Chemistry / Chemical Physics

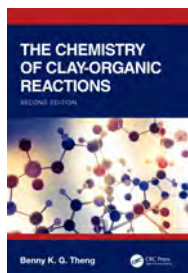
February 2024: 229x152: 282pp: 120 illus, 2 halftones, 118 line drawings

Hb: 978-1-032-46623-1: **£89.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032466231

2nd Edition

The Chemistry of Clay-Organic Reactions

**Benny K.G. Theng**

This book provides a comprehensive and critical summary of the vast literature on the interactions of clay minerals with organic molecules, including reaction mechanisms, and bonding modes together with their practical and industrial applications. The reader will gain an insight into the formation and properties of complexes between clay minerals and a variety of organic compounds, and the use of such complexes as sorbents and carriers of organic pollutants, pesticides, dyes, and pharmaceuticals. The book is intended for environmental and industrial chemists, organic geochemists, and soil scientists, and will appeal to academics, researchers, industry professionals, and graduate students.

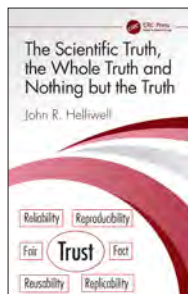
CRC Press

Market: Geochemistry

April 2024: 254x178: 344pp: 91 illus, 7 halftones, 84 line drawings

Hb: 978-0-367-53038-9: **£150.00**★ For full contents and more information, visit: www.routledge.com/9780367530389

The Scientific Truth, the Whole Truth and Nothing but the Truth

**John R. Helliwell**, University of Manchester, School of Chemistry, United UK

There is a limited understanding amongst scientists, students and the public about realizing trust in scientific findings. This should be a paramount objective, or is it only about career ambition? What is the role of the individual? Scientists and the public need to know more about the link between the philosophy of science and the science research methods.

CRC Press

Market: Chemistry

April 2024: 234x156: 112pp: 21 illus, 8 halftones, 13 line drawings

Hb: 978-1-032-52139-8: **£74.99**★ For full contents and more information, visit: www.routledge.com/9781032521398

COMPUTER SCIENCE & COMPUTER GRAPHICS

A Case Study for Computer Ethics in Context

The Scandal in Academia

**Michael James Heron**, Chalmers University of Technology / University of Gothenburg, Sweden and **Pauline Helen Belford**, Chalmers University of Technology / University of Gothenburg, Sweden

Aimed at addressing the difficulties associated with teaching often abstract elements of technical ethics, this book is an extended fictional case study into the complexities of technology and social structures in complex organizations. Within this case study, an accidental discovery reveals that the algorithms of Professor John Blackbriar are not quite what they were purported to be. Over the course of fourteen newspaper articles, a nebula of professional malpractice and ethical compromise is revealed, ultimately

destroying the career of a prominent, successful academic.

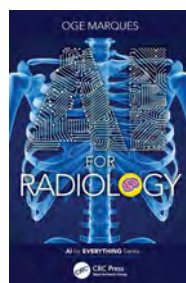
CRC Press

Market: Computer Science/Ethics

March 2024: 234x156: 344pp

Pb: 978-1-032-54691-9: **£44.99**★ For full contents and more information, visit: www.routledge.com/9781032546919

AI for Radiology

**Oge Marques**, Florida Atlantic University, Boca Raton, USA*Series: AI for Everything*

Artificial Intelligence has revolutionised many areas of medicine and is increasingly being embraced. This book focuses on the integral role of AI in radiology, shedding light on how this technology can enhance patient care and streamline professional workflows. This book has been crafted with a diverse readership in mind. It is a valuable asset for medical professionals eager to stay up-to-date with AI developments, computer scientists curious about AI's clinical applications, and anyone interested in the intersection of healthcare and technology.

CRC Press

Market: Artificial Intelligence

February 2024: 198x129: 236pp: 6 illus, 6 line drawings

Hb: 978-0-367-62778-2: **£125.00**★ For full contents and more information, visit: www.routledge.com/9780367627782

TEXTBOOK

An Introduction to Universal Artificial Intelligence

**Marcus Hutter, Elliot Catt and David Quarell***Series: Chapman & Hall/CRC Artificial Intelligence and Robotics Series*

An Introduction to Universal Artificial Intelligence provides a gentle introduction to Universal Artificial Intelligence (UAI), a theory that provides a formal underpinning of what it means for an agent to act intelligently in a general class of environments. First presented in Universal Artificial Intelligence (Hutter, 2004), UAI presents a model in which most other problems in AI can be presented, and unifies ideas from sequential decision theory, Bayesian inference and information theory to construct AIXI, an optimal reinforcement learning agent that learns to act optimally in unknown environments.

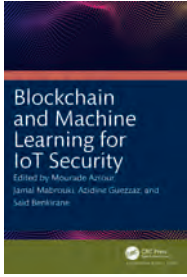
Chapman and Hall/CRC

Market: Computer Science / AI

March 2024: 254x178: 416pp: 63 illus, 6 halftones, 57 line drawings

Pb: 978-1-032-60702-3: **£56.99**★ For full contents and more information, visit: www.routledge.com/9781032607023

Blockchain and Machine Learning for IoT Security



Edited by **Mourade Azrou**, Moulay ismail University of Meknes, Morocco, **Jamal Mabrouki, Azidine Guezzaz**, Cadi Ayyad University Marrakech, Morocco and **Said Benkirane**, Cadi Ayyad University Higher School of Technology, Morocco

This book discusses various recent techniques and solutions related to IoT deployment, especially security, and privacy. It addresses a variety of subjects, including a comprehensive overview of the IoT, and covers in detail the security challenges at each layer, by considering how both the architecture and underlying technologies are employed. As acknowledged experts in the field, the authors provide remediation solutions

for impaired security, as well as mitigation methods, and offer both prevention and improvement suggestions.

Chapman and Hall/CRC

Market: Machine Learning

February 2024: 234x156: 164pp: 27 illus, 27 line drawings

Hb: 978-1-032-56344-2: **£105.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032563442

Data Mining with Python

Theory, Application, and Case Studies



Di Wu

Series: Chapman & Hall/CRC The Python Series

This book focuses on the hands-on approach to learning Data Mining. It showcases how to use Python Packages to fulfill the Data Mining pipeline, which is to collect, integrate, manipulate, clean, process, organize, and analyze data for knowledge. It is designed to give students, data scientists, and business analysts an understanding of Data Mining concepts in an applicable way. Through interactive tutorials that can be run, modified, and used for a more comprehensive learning experience, this book will help its readers to gain practical skills to implement Data Mining techniques in their work.

Chapman and Hall/CRC

Market: Data Science

April 2024: 254x178: 430pp: 222 illus, 222 halftones

Pb: 978-1-032-59890-1: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032598901

TEXTBOOK

Deep Learning for Engineers



Edited by **Tariq M. Arif**, Weber State University Ogden, UT and **Md Adilur Rahim**, Louisiana State University Baton Rouge, LA

As a comprehensive guideline for applying deep learning models in practical settings, this book features an easy-to-understand coding structure using Python and PyTorch with an in-depth explanation of four typical deep learning case studies on image classification, object detection, semantic segmentation, and image captioning. Science and engineering students, academic researchers, and industry professionals will find the contents useful.

Chapman and Hall/CRC

Market: Machine Learning

March 2024: 234x156: 168pp: 131 illus, 117 halftones, 14 line drawings

Pb: 978-1-032-51581-6: **£46.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032515816

Digital Health

A Primer



Edited by **Nilmini Wickramasinghe**, La Trobe University, Australia

Series: Analytics and AI for Healthcare

Healthcare systems globally are grappling with how best to implement effective and efficient patient-centered care while simultaneously trying to contain runaway costs and provide high quality. This book explores the essential enabling role of digital health, taking a socio-technical perspective and looking at the key facets of technology, people and process in turn. The text introduces critical issues and is suitable reading for students, practitioners and researchers in digital health and all healthcare related domains.

Chapman and Hall/CRC

Market: Computer Science / Digital healthcare

April 2024: 234x156: 324pp

Pb: 978-1-032-33168-3: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032331683

Digital Transformation in Your Manufacturing Business

A Made Smarter Guide

Will Kinghorn

This book will give you a straightforward guide to manufacturing technologies, examples of how they're used, as well as the tools and techniques you'll need to get started. Each technology is covered on a single page meaning you can understand it quickly and decide if it's worth you investigating it for your business. In addition to the book, the online resources will provide you with templates and examples to help you get started quickly, and at every stage there are suggestions for the key terms you need to find more information appropriate to your industry. Get started with making informed decisions, embracing technologies, and transforming your business

CRC Press

Market: Digital Transformation

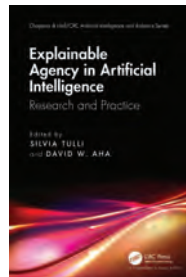
June 2024: 234x156: 168pp: 9 illus, 9 line drawings

Pb: 978-1-032-62624-6: **£42.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032626246

Explainable Agency in Artificial Intelligence

Research and Practice



Edited by **Silvia Tulli** and **David W. Aha**

Series: Chapman & Hall/CRC Artificial Intelligence and Robotics Series

This book focuses on a subtopic of Explainable AI (XAI) called *Explainable Agency* (EA), which involves producing records of decisions made during an agent's reasoning, summarizing its behavior in human-accessible terms, and providing answers to questions about specific choices and the reasons for them. Chapters explore the concept of endowing intelligent agents with explainable agency, which is crucial for agents to be trusted by humans in critical domains such as finance, self-driving vehicles, and military operations. Ultimately, this book aims to contribute to the successful partnership between humans and AI systems.

CRC Press

Market: Artificial Intelligence / Human Computer Interaction

January 2024: 234x156: 170pp: 36 illus, 7 halftones, 29 line drawings

Pb: 978-1-032-39258-5: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032392585

Human-Centered AI

A Multidisciplinary Perspective for Policy-Makers, Auditors, and Users



Edited by **Catherine Régis, Jean-Louis Denis**, School of Public Health, Université de Montreal, Canada, **María Luciana Axente** and **Atsuo Kishimoto**
Series: Chapman & Hall/CRC Artificial Intelligence and Robotics Series

With 23 captivating chapters, this book delves deep into the realm of HCAI. In Section 1, it demystifies HCAI, exploring cutting-edge trends and approaches in its study, including the moral landscape of Large Language Models. Section 2 looks at how HCAI is viewed in different institutions—like the justice system, health system, and higher education—and how it could affect them. Section 3 offers practical insights and successful

strategies to transform HCAI from theory to reality, for example, studying how using regulatory sandboxes could ensure the development of age-appropriate AI for kids.

Chapman and Hall/CRC

Market: Computer Science / AI

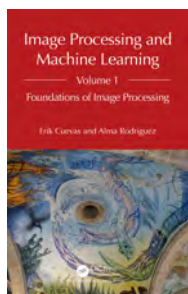
March 2024: 234x156: 304pp: 24 illus, 4 halftones, 20 line drawings

Pb: 978-1-032-34161-3: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032341613

Image Processing and Machine Learning, Volume 1

Foundations of Image Processing



Erik Cuevas and **Alma Rodriguez**

Image processing and machine learning are used in conjunction to analyze and understand images. Where image processing is used to pre-process images using techniques such as filtering, segmentation and feature extraction, machine learning algorithms are used to interpret the processed data through classification, clustering and object detection. This book serves as a textbook for students and instructors of image processing, covering the theoretical foundations and practical applications of some of the most prevalent image processing methods and approaches.

Chapman and Hall/CRC

Market: Computer Science

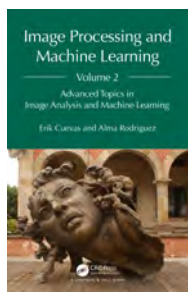
February 2024: 234x156: 226pp: 254 illus, 96 halftones, 158 line drawings

Hb: 978-1-032-23458-8: **£74.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032234588

Image Processing and Machine Learning, Volume 2

Advanced Topics in Image Analysis and Machine Learning



Erik Cuevas and **Alma Rodriguez**

Image processing and machine learning are used in conjunction to analyze and understand images. Where image processing is used to pre-process images using techniques such as filtering, segmentation and feature extraction, machine learning algorithms are used to interpret the processed data through classification, clustering and object detection. This book serves as a textbook for students and instructors of image processing, covering the theoretical foundations and practical applications of some of the most prevalent image processing methods and approaches.

Chapman and Hall/CRC

Market: Computer Science

February 2024: 234x156: 240pp: 316 illus, 135 halftones, 181 line drawings

Hb: 978-1-032-66032-5: **£74.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032660325

Innovation District Planning

Concept, Framework, Practice



Tan Yigitcanlar, Queensland University of Technology, **Surabhi Pancholi**, Deakin University Geelong Waterfront Campus, **Niusha Esmaelpoorarabi**, University of Tehran and **Rosemary Adu-McVie**, Papua New Guinea University of Technology

This book aims to fill the knowledge gap on how to plan, develop and manage innovation districts, that are competitive in terms of both productivity and quality of living, justifying the massive investment put into place and at the same time doing both in such a delicate and harmonious way. The book serves as a repository for scholars, researchers, postgraduate and undergraduate students.

Chapman and Hall/CRC

Market: Planning / Smart Districts / Innovation

March 2024: 234x156: 542pp: 48 illus, 26 halftones, 22 line drawings

Pb: 978-1-032-65701-1: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032657011

Jumping Computation

Updating Automata and Grammars for Discontinuous Information Processing



Alexander Meduna, Brno University of Technology, Brno, Czech Republic and **Zbyněk Křivka**, Brno University of Technology, Brno, Czech Republic

Jumping Computation: Updating Automata and Grammars for Discontinuous Information Processing is primarily a theoretically oriented treatment of jumping automata and grammars, covering all essential theoretical topics concerning them, including their power, properties, and transformations. From a practical viewpoint, it describes various concepts, methods, algorithms, techniques, case studies and applications based upon these automata and grammars.

CRC Press

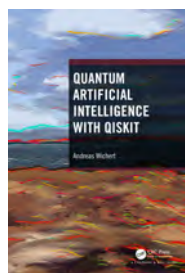
Market: Computer Science

March 2024: 234x156: 296pp: 39 illus, 39 line drawings

Pb: 978-0-367-63479-7: **£56.99**

★ For **full contents** and more information, visit: www.routledge.com/9780367634797

Quantum Artificial Intelligence with Qiskit



Andreas Wichert

This book provides a cohesive overview of the field of QAI, providing the tools for readers to create and manipulate quantum programs on devices as accessible as a laptop computer. Introducing symbolical quantum algorithms, sub symbolical quantum algorithms and quantum Machine Learning (ML) algorithms, this book explains each process step-by-step with associated QISKIT listings.

Chapman and Hall/CRC

Market: Computer Science

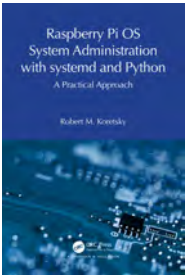
January 2024: 254x178: 325pp: 135 illus, 135 line drawings

Hb: 978-1-032-44897-8: **£74.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032448978

Raspberry Pi OS System Administration with systemd and Python

A Practical Approach



Robert M. Koretsky

The second in a new series exploring the basics of Raspberry Pi Operating System administration, this instalment builds on the insights provided in Volume 1 to provide a compendium of easy-to-use and essential Raspberry Pi OS system administration for the novice user, with specific focus on Python and Python3.

Chapman and Hall/CRC

Market: Computer Science

December 2023: 234x156: 332pp: 18 illus, 18 line drawings

Pb: 978-1-032-59688-4: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032596884

Raspberry Pi OS Text Editors, git, and LXC

A Practical Approach



Robert M. Koretsky

Series: Raspberry Pi OS System Administration with systemd

The third volume in a new series exploring the basics of Raspberry Pi Operating System administration, this instalment builds on the insights provided in Volumes 1 and 2 to provide a compendium of easy-to-use and essential Raspberry Pi OS system administration for the novice user, with specific focus on Text Editors, git/GitHub and LXC/LXD. This book is aimed at students and practitioners looking to maximise their use of the Raspberry Pi OS. With plenty of practical examples, projects and exercises.

Chapman and Hall/CRC

Market: Computer Science

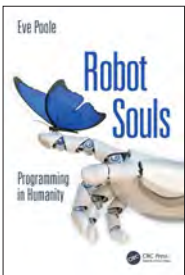
May 2024: 234x156: 278pp: 37 illus, 37 line drawings

Hb: 978-1-032-59690-7: **£110.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032596907

Robot Souls

Programming in Humanity



Eve Poole

It was assumed that robots with features like emotions and intuition, that made mistakes and looked for meaning and purpose, would not work as well as robots without this kind of code. But on considering why all these irrational properties are there, it seems that they emerge from the source-code of soul. It is actually this 'junk' code that makes us human and promotes the kind of reciprocal altruism that keeps humanity thriving. This book looks at developments in AI and reviews the emergence of ideas of consciousness and the soul. It places our 'junk code' in this context and argues that it is time to foreground that code, and to use it to look again at how we are programming AI.

CRC Press

Market: AI Ethics / Responsible AI

August 2023: 234x156: 184pp: 1 illus, 1 line drawing

Pb: 978-1-032-42662-4: **£22.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032426624

Software Design by Example

A Tool-Based Introduction with Python



Greg Wilson

The best way to learn design in any field is to study examples, *Software Design by Example: A Tool-Based Introduction with Python* therefore builds small versions of the things programmers use in order to demystify them and give some insights into how experienced programmers think.

Key Features:

- Teaches software design by showing programmers how to build the tools they use every day
- Each chapter includes exercises to help readers check and deepen their understanding

• All the example code can be downloaded, re-used, and modified under an open license.

Chapman and Hall/CRC

Market: Computer Science

April 2024: 254x178: 334pp: 106 illus, 1 halftone, 105 line drawings

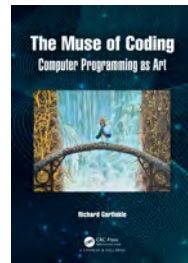
Pb: 978-1-032-72521-5: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032725215

TEXTBOOK

The Muse of Coding

Computer Programming as Art



Richard Garfinkle, Oakland University, USA

The Muse of Coding gives students and experienced programmers a way to see coding as an art and themselves as artists whose personal views, experiences and ways of thinking can make their programs better for themselves and their users. Not confined to a single language or style of coding, this book provides a widely applicable framework for people to learn what languages and styles work best for them at present and as the field evolves. It can be used as a classroom text or for personal study and enrichment.

Chapman and Hall/CRC

Market: Computer Science

March 2024: 254x178: 304pp: 16 illus, 16 line drawings

Pb: 978-1-032-60606-4: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032606064

Tiny Android Projects Using Kotlin



Denis Panjuta and **Loveth Nwokike**

In today's fast-paced world, Android development is a rapidly evolving field that requires regular updates to keep up with the latest trends and technologies. *Tiny Android Projects Using Kotlin* is an excellent resource for developers who want to learn to build Android applications using the latest tools and frameworks. With Kotlin being the most preferred language for Android development, this book provides a practical, hands-on approach to learning the language and building high-quality Android apps using Kotlin, XML, and Jetpack Compose.

Chapman and Hall/CRC

Market: Programming

February 2024: 234x156: 384pp: 163 illus, 161 halftones, 2 line drawings

Pb: 978-1-032-60687-3: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032606873

Transcending Imagination

Artificial Intelligence and the Future of Creativity



Alexander Manu

Series: Chapman & Hall/CRC Artificial Intelligence and Robotics Series

Transcending Imagination is a vision into a new world of artifacts of beauty whose intention is articulated by a human and is manifested by a neural network. The book examines the potential for AI to both enhance and transform the creative process, exploring the impact it will have on the arts, design, entertainment, and in the education of artists and designers.

Chapman and Hall/CRC

Market: Artificial Intelligence / Art / Creativity

April 2024: 254x178: 256pp: 100 illus, 100 halftones

Pb: 978-1-032-58402-7: **£44.99**

★ For full contents and more information, visit: www.routledge.com/9781032584027

Transition to Advanced Analytics

Get a Return on Your Analytics Investment



Jason Tan and Brian Ferris, Loyalty New Zealand Ltd

This book focuses on how to embed advanced analytics directly into daily business operations and complement an enterprise system. The title also provides a step-by-step implementation framework for CDAOs to develop their advanced analytics capabilities and in tandem with legacy IT systems.

Chapman and Hall/CRC

Market: Data Science

April 2024: 234x156: 170pp: 42 illus, 42 line drawings

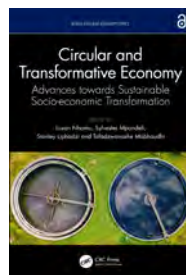
Pb: 978-1-032-52754-3: **£44.99**

★ For full contents and more information, visit: www.routledge.com/9781032527543

ENVIRONMENTAL SCIENCE

Circular and Transformative Economy

Advances towards Sustainable Socio-economic Transformation



Edited by **Luxon Nhamo, Sylvester Mpendeli, Stanley Liphadzi and Tafadzwanashe Mabhaudhi**

Series: Africa Circular Economy Series

The main aim of the book is to illustrate circular models for sustainable resource management. It highlights the benefits of transformative approaches in integrating, simplifying, and facilitating understanding of complex systems and transforming systems towards greater sustainability while achieving multiple social, economic, and environmental outcomes. It provides pathways towards strategic policy decisions on socio-economic transformation supported by case studies. This book is aimed at researchers and professionals in water and environmental engineering, circular economy, sustainability, and environmental studies.

CRC Press

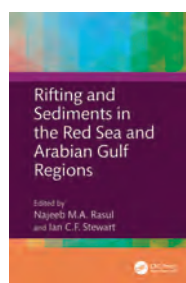
Market: Resource Management and Sustainability

February 2024: 234x156: 352pp: 45 illus, 18 halftones, 27 line drawings

Hb: 978-1-032-35601-3: **£74.99**

★ For full contents and more information, visit: www.routledge.com/9781032356013

Rifting and Sediments in the Red Sea and Arabian Gulf Regions



Edited by **Najeeb M.A. Rasul**, Geological and Geophysical Research Systems, Canada and **Ian C.F. Stewart**, Stewart Geophysical Consultants Pty. Ltd., Australia.

Rifting and Sediments in the Red Sea and Arabian Gulf Regions is a unique text that covers a wide range of topics related to the tectonics and geology of the Red Sea and Arabian (Persian) Gulf region. The book is a collection of invited and peer-reviewed chapters contributed by active researchers around the world. The topics covered in the book include the tectonics, magmatism, and lithology, particularly in the Red Sea area. It also delves into the sediments and evaporites of the Red Sea and Gulf.

CRC Press

Market: Earth Sciences

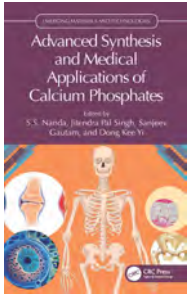
May 2024: 297x210: 352pp: 224 illus, 185 halftones, 59 line drawings

Hb: 978-1-032-34296-2: **£160.00**

★ For full contents and more information, visit: www.routledge.com/9781032342962

MATERIALS SCIENCE

Advanced Synthesis and Medical Applications of Calcium Phosphates



Edited by **Sitansu Sekhar Nanda, Jitendra Pal Singh, Sanjeev Gautam and Dong Kee Yi**

Series: *Emerging Materials and Technologies*

Calcium phosphate materials are used in many medical and dental applications. *Advanced Synthesis and Medical Applications of Calcium Phosphates* covers the structure, chemistry, synthesis, and properties of both natural and synthetic calcium-based biomaterials and details a variety of medical applications. Detailing fundamentals through applications, this book helps biomaterials researchers to better understand the clinical targets and requirements for use of these materials for optimal synthesis and development.

CRC Press

Market: Materials/Biomedical Engineering

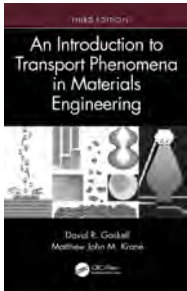
May 2024: 234x156: 192pp: 46 illus, 22 halftones, 24 line drawings

Hb: 978-1-032-41963-3: **£150.00**

★ For full contents and more information, visit: www.routledge.com/9781032419633

TEXTBOOK • 3rd Edition

An Introduction to Transport Phenomena in Materials Engineering



David R. Gaskell, Purdue University, West Lafayette, Indiana, USA and **Matthew John M. Krane**

This classic textbook book helps readers understand the basic physics of transport phenomena and how to apply them to materials processing. The Third Edition offers a significant shift in the approach to this subject, representing an evolution incorporating the original ideas and extending them to a more comprehensive approach to the topic. This text is aimed at advanced engineering undergraduates and students early in their graduate studies, as well as practicing engineers interested in understanding the behavior of heat and mass transfer and fluid flow during materials processing.

CRC Press

Market: Materials Science and Engineering

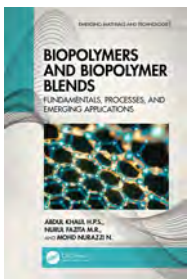
January 2024: 234x156: 613pp: 393 illus, 6 halftones, 387 line drawings

Hb: 978-0-367-82107-4: **£100.00**

★ For full contents and more information, visit: www.routledge.com/9780367821074

Biopolymers and Biopolymer Blends

Fundamentals, Processes, and Emerging Applications



Abdul Khalil H.P.S., Nurul Fazita M.R. and Mohd Nurazzi N.

Series: *Emerging Materials and Technologies*

This book showcases the potential of biopolymers as alternative sources to conventional nonbiodegradable petroleum-based polymers. It discusses fundamentals of biopolymers and biopolymer blends from natural and synthetic sources, synthesis, and characterization. It also describes development of desired performance for specific applications in 3D printing and other emerging applications in industry, including packaging, pulp and paper, agriculture, biomedical, and marine. Providing readers with a detailed overview of the latest advances in the field and a wealth of applications, this work will appeal to researchers in

materials engineering, biotechnology, and related disciplines.

CRC Press

Market: Materials Science and Engineering

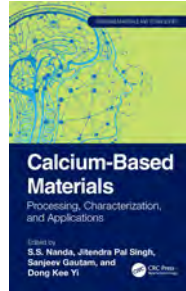
February 2024: 234x156: 396pp: 107 illus, 45 halftones, 62 line drawings

Hb: 978-1-032-54260-7: **£150.00**

★ For full contents and more information, visit: www.routledge.com/9781032542607

Calcium-Based Materials

Processing, Characterization, and Applications



Edited by **S.S. Nanda, Jitendra Pal Singh, Sanjeev Gautam and Dong Kee Yi**

Series: *Emerging Materials and Technologies*

Calcium-based natural minerals are important for wide range of applications. Though these materials are available in the nature, researchers are working towards developing these materials in the laboratory. *Calcium-Based Materials: Processing, Characterization, and Applications* introduces the possibility of designing these materials for particular applications. This comprehensive text is aimed at researchers in materials science and engineering and bioengineering.

CRC Press

Market: Materials Engineering / Bioengineering

May 2024: 234x156: 210pp: 83 illus, 30 halftones, 53 line drawings

Hb: 978-1-032-41955-8: **£150.00**

★ For full contents and more information, visit: www.routledge.com/9781032419558

Carbon Nanotube-Based Sensors

Fabrication, Characterization, and Implementation



Edited by **Anindya Nag**, Technische Universität Dresden, Germany and **Alivia Mukherjee**

Carbon Nanotube-Based Sensors highlights the latest research and developments on carbon nanotubes (CNTs) and their applications in sensors and sensing systems. It offers an overview of CNTs, including their synthesis, functionalization, characterization, and toxicology. It then delves into the fabrication and various applications of CNT-based sensors. This book is aimed at researchers in the fields of materials and electrical engineering who are interested in the development of sensor technology for industrial, biomedical, and related applications.

CRC Press

Market: Materials and Electrical Engineering

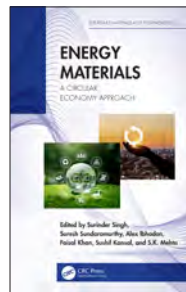
May 2024: 234x156: 348pp: 136 illus, 34 halftones, 102 line drawings

Hb: 978-1-032-45231-9: **£120.00**

★ For full contents and more information, visit: www.routledge.com/9781032452319

Energy Materials

A Circular Economy Approach



Edited by **Surinder Singh, Suresh Sundaramurthy, Maulana Azad National Institute of Technology, India, Alex Ibadon, Faisal Khan, Sushil Kansal and S.K. Mehta**

Series: *Emerging Materials and Technologies*

Energy Materials: A Circular Economy Approach emphasizes the engineering scalability of a circular economy approach to development and use of energy materials. It focuses on waste minimization and its valorization, recycling and reuse, and emerging sustainable materials and technologies. It offers a view of the eco-friendly energy materials and state-of-the-art technologies required for production of these materials in the process industry and manufacturing sectors. This book is aimed at researchers and professional engineers and scientists working in

chemical, materials, energy, and environmental engineering, as well as materials chemistry.

CRC Press

Market: Materials Science / Energy Engineering

March 2024: 234x156: 424pp: 122 illus, 25 halftones, 97 line drawings

Hb: 978-1-032-21726-0: **£150.00**

★ For full contents and more information, visit: www.routledge.com/9781032217260

Failure Analysis of Composite Materials with Manufacturing Defects



Ramesh Talreja

Series: *Applied and Computational Mechanics*

This book details approaches that depart from traditional treatments by accounting for manufacturing defects in composite materials. It discusses how manufacturing defects are produced and how they affect the performance of composite materials. It is aimed at researchers in industry and academia in Aerospace Engineering, Mechanical Engineering, and Materials Science and Engineering. It also serves as a reference for students taking advanced courses in composite materials.

CRC Press

Market: Materials and Mechanical Engineering

February 2024: 234x156: 208pp: 228 illus, 77 halftones, 151 line drawings

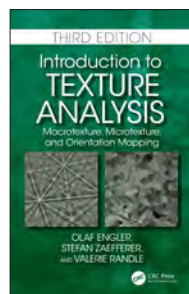
Hb: 978-1-032-12686-9: **£89.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032126869

3rd Edition

Introduction to Texture Analysis

Macrotecture, Microtexture, and Orientation Mapping



Olaf Engler, Speira, Germany, Stefan Zaefferer and Valerie Randle

Reflecting emerging methods and the evolution of the field, *Introduction to Texture Analysis: Macrotecture, Microtexture, and Orientation* keeps mathematics to a minimum in covering both traditional macrotecture analysis and more advanced electron-microscopy-based microtexture analysis. The authors integrate the two techniques and address the subsequent need for a more detailed explanation of philosophy, practice, and analysis associated with texture analysis. The book illustrates approaches to orientation measurement and interpretation and elucidates the fundamental principles on which measurements are based.

CRC Press

Market: Materials Science and Engineering

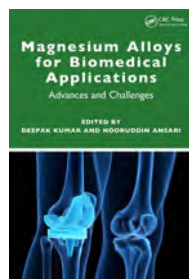
February 2024: 234x156: 590pp: 283 illus, 134 halftones, 149 line drawings

Hb: 978-1-032-19248-2: **£240.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032192482

Magnesium Alloys for Biomedical Applications

Advances and Challenges



Edited by Deepak Kumar and Nooruddin Ansari

Magnesium alloys have enormous potential for use in biomedical implants. This book delves into recent advances and prospects for implementation and provides scientific insights into current issues posed by Mg alloys materials. It provides an overview of research on their mechanical and tribological characteristics, corrosion tendencies, and biological characteristics, with a particular emphasis on biomedical implants. Aimed at researchers in materials and biomedical engineering, this book explores the many breakthroughs achieved with these materials and where the field should concentrate to ensure the development of safe and reliable Mg alloy-based implants.

CRC Press

Market: Materials Science and Engineering

April 2024: 234x156: 304pp: 79 illus, 18 halftones, 61 line drawings

Hb: 978-1-032-50881-8: **£140.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032508818

Microfibre Pollution from Textiles

Research Advances and Mitigation Strategies



Edited by R. Rathinamoorthy and S. Raja Balasaraswathi

Series: *Textile Institute Professional Publications*

Textile materials shed microfibres during different phases of their life cycle. While much attention has been paid to the impact of microplastics on the environment, there has been less focus on the impact of microfibre pollution, which also poses a serious environmental threat. By bridging the gap between environmental and textile studies, this book is aimed at researchers and advanced students in textile and environmental science and engineering.

CRC Press

Market: Materials and Chemical Engineering

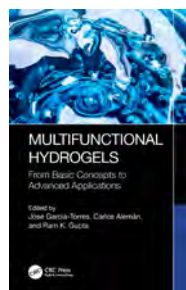
April 2024: 234x156: 600pp: 84 illus, 40 halftones, 44 line drawings

Hb: 978-1-032-36276-2: **£190.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032362762

Multifunctional Hydrogels

From Basic Concepts to Advanced Applications



Edited by José García-Torres, Universitat Politècnica De Catalunya, Spain, Carlos Alemán and Ram K. Gupta, Pittsburg State University

This book offers a comprehensive overview of multifunctional hydrogels, covering fundamentals, properties, and advanced applications in a progressive way. While each chapter can be read stand-alone, together they clearly describe the fundamental concepts of design, synthesis, and fabrication as well as properties and performances of smart multifunctional hydrogels and their advanced applications in the biomedical, environmental, and robotics fields. The book serves as a valuable resource for academic and industry researchers from interdisciplinary fields including materials science, chemistry, chemical engineering, bioengineering, physics, and pharmaceutical engineering.

CRC Press

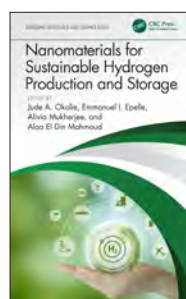
Market: Materials Science and Engineering

April 2024: 234x156: 472pp: 116 illus, 12 halftones, 104 line drawings

Hb: 978-1-032-37340-9: **£150.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032373409

Nanomaterials for Sustainable Hydrogen Production and Storage



Edited by Jude A. Okolie, Emmanuel I. Epelle, Alivia Mukherjee and Alaa El Din Mahmoud

Series: *Emerging Materials and Technologies*

Hydrogen is poised to play a major role in the transition towards net-zero economy. Nanomaterials present a promising solution to implementation of hydrogen energy, playing an integral role in overcoming the limitations of hydrogen production and storage. This book explores these innovations, covering a wide spectrum of applications of nanomaterials for sustainable hydrogen production and storage. Aimed at researchers and professionals in chemical, materials, energy, environmental and related engineering disciplines, this work provides readers with an overview of the latest techniques and materials for the development and advancement of hydrogen energy technologies.

CRC Press

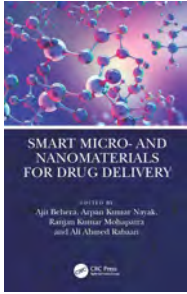
Market: Materials Science and Energy Engineering

April 2024: 234x156: 214pp: 33 illus, 16 halftones, 17 line drawings

Hb: 978-1-032-44207-5: **£120.00**

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Smart Micro- and Nanomaterials for Drug Delivery



Edited by **Ajit Behera**, National Institute of Technology, Rourkela, **Arpan Kumar Nayak**, **Ranjan Kumar Mohapatra** and **Ali Ahmed Rabaan**

Series: Emerging Materials and Technologies

Smart drug delivery at both the micro- and nanoscale is an evolving field with numerous potential applications. It has the potential to revolutionize drug therapy by making treatments more effective, reducing side effects, and improving patient outcomes. This book presents a comprehensive review of the most recent studies on smart micro- and nanomaterials with a focus on their "smart" activity for formation of targeted and responsive drug-delivery carriers. This reference work is written to support researchers in the fields of materials engineering and

biotechnology with the goal of improving the diagnosis and treatment of disease and patient quality of life.

CRC Press

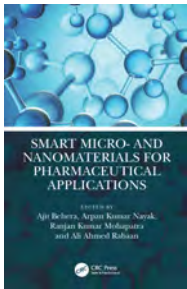
Market: Materials Engineering and Biotechnology

June 2024: 234x156: 496pp: 78 illus, 51 halftones, 27 line drawings

Hb: 978-1-032-74260-1: **£150.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032742601

Smart Micro- and Nanomaterials for Pharmaceutical Applications



Edited by **Ajit Behera**, National Institute of Technology, Rourkela, **Arpan Kumar Nayak**, **Ranjan Kumar Mohapatra** and **Ali Ahmed Rabaan**

Series: Emerging Materials and Technologies

Smart drug delivery refers to a targeted drug delivery or precision drug delivery system that allows drugs to be administered to a specific location in the body or at a specific time with enhanced precision and control. This approach has several advantages, including maximizing the therapeutic effects of a drug while minimizing side effects. This book presents various stimuli-responsive micro- and nanomaterials for pharmaceutical industries. This reference work is written to support researchers in the fields of materials engineering and

biotechnology with the goal of improving the diagnosis and treatment of disease and patient quality of life.

CRC Press

Market: Materials Engineering and Biotechnology

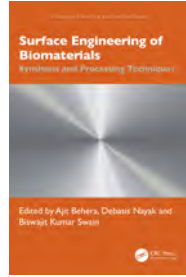
June 2024: 234x156: 416pp: 37 illus, 18 halftones, 19 line drawings

Hb: 978-1-032-74261-8: **£150.00**

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Surface Engineering of Biomaterials

Synthesis and Processing Techniques



Edited by **Ajit Behera**, National Institute of Technology, Rourkela, **Debasis Nayak** and **Biswajit Kumar Swain**

Series: Emerging Materials and Technologies

Surface engineering is essential to achieve predetermined functional properties of materials such as mechanical strength, biocompatibility, corrosion resistance, wear resistance, and heat and oxidation resistance. This book addresses surface engineering of biomaterials across a diverse range of process technologies and healthcare applications.

CRC Press

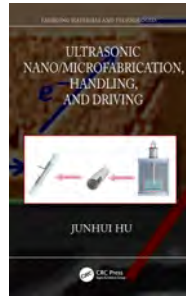
Market: Materials Science and Engineering

March 2024: 234x156: 626pp: 142 illus, 55 halftones, 87 line drawings

Hb: 978-1-032-55282-8: **£170.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032552828

Ultrasonic Nano/Microfabrication, Handling, and Driving



Junhui Hu

Series: Emerging Materials and Technologies

Ultrasonic nano/micro fabrication, handling, and driving is an emerging technology that utilizes ultrasonic vibration and the physical effects of ultrasonic vibration in fluids and solids to implement fabrication, handling, and driving of nano/micro scale objects. This book provides readers with the fundamentals and principles related to ultrasonic nano/micro fabrication, handling, and driving, the detailed methods of designing devices based on these principles, and characteristics of these devices. The book shares the advances, methods, and applications of ultrasonic micro/nanofabrication techniques for advanced readers working on fabrication of nano/micro devices.

CRC Press

Market: Mechanical Engineering

February 2024: 234x156: 300pp: 408 illus, 238 halftones, 170 line drawings

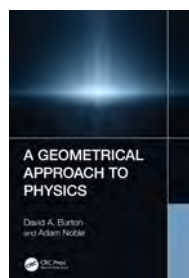
Hb: 978-1-032-51972-2: **£130.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032519722

PHYSICS

TEXTBOOK

A Geometrical Approach to Physics



David A. Burton and Adam Noble

The purpose of the book is to act as a 'gateway' to more advanced books on the applications of differential geometry in physics. It will also help the reader to better appreciate modern physics research that makes use of differential geometry, and the common features that permeate the discipline as a whole.

CRC Press

Market: Physics

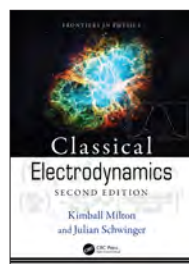
March 2024: 234x156: 216pp: 8 illus, 8 line drawings

Pb: 978-1-032-12928-0: £44.99

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TEXTBOOK • 2nd Edition

Classical Electrodynamics



Julian Schwinger

Edited by Kimball Milton

Series: *Frontiers in Physics*

Classical Electrodynamics captures Schwinger's inimitable lecturing style, in which everything flows inexorably from what has gone before. This anniversary edition offers a refreshing update while still maintaining Schwinger's voice. The book provides the student with a thorough grounding in electrodynamics in particular, and in classical field theory in general.

CRC Press

Market: Electrodynamics

April 2024: 254x178: 600pp: 105 illus, 105 line drawings

Hb: 978-0-367-50207-2: £89.99

Prev. Ed Hb: 978-0-7382-0056-9

★ For full contents and more information, visit: www.routledge.com/9780367502072

Electrodynamics Tutorials with Python Simulations



Taejoon Kouh and Minjoon Kouh

Series: *Series in Computational Physics*

This book provides an accessible introduction to intermediate-level electrodynamics with computational approaches to complement a traditional mathematical treatment of the subject. It covers key topics in electrodynamics, such as electromagnetic fields, forces, potentials, and waves as well as Special Theory of Relativity.

CRC Press

Market: Physics

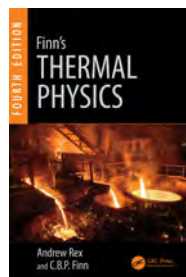
April 2024: 234x156: 328pp: 110 illus, 4 halftones, 106 line drawings

Pb: 978-1-032-50231-1: £44.99

★ For full contents and more information, visit: www.routledge.com/9781032502311

TEXTBOOK • 4th Edition

Finn's Thermal Physics



Andrew Rex, University of Puget Sound, Tacoma, Washington, USA and C.B.P. Finn, Sussex University, UK

While maintaining the style of the original work, the book now covers statistical mechanics and incorporates worked examples systematically throughout the text. It also covers more problems, and incorporates some essential updates, such as discussions on superconductivity, magnetism, Bose-Einstein condensation, and climate change.

CRC Press

Market: Physics

April 2024: 234x156: 440pp: 125 illus, 125 line drawings

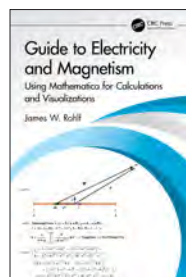
Pb: 978-1-032-28982-3: £52.99

★ For full contents and more information, visit: www.routledge.com/9781032289823

TEXTBOOK

Guide to Electricity and Magnetism

Using Mathematica for Calculations and Visualizations



James W. Rohlf

This is a "how to guide" for a calculus-based introductory course in electricity and magnetism. Students taking the subject at an intermediate or advanced level may also find it to be a useful reference. The calculations are performed in Mathematica, and stress graphical visualization, units, and numerical answers. The techniques show the student how to learn the physics without being hung up on the math.

CRC Press

Market: Physics

March 2024: 234x156: 240pp: 98 illus, 98 line drawings

Pb: 978-1-032-64085-3: £42.99

★ For full contents and more information, visit: www.routledge.com/9781032640853

Guidebook to Real Time Electron Dynamics

Irradiation Dynamics From Molecules to Nanoclusters



Jorge Kohanoff, Paul-Gerhard Reinhard, Lorenzo Stella and Eric Suraud

This practical book presents an overview of the various approaches developed to understand the dynamics of electronic systems in physics and chemistry. It also illustrates typical application examples, namely atoms, molecules, and clusters such as nano objects.

CRC Press

Market: Physics

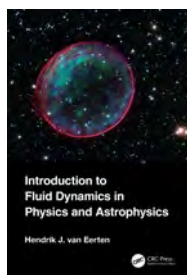
February 2024: 234x156: 262pp: 54 illus, 17 halftones, 37 line drawings

Hb: 978-0-367-65126-8: £115.00

★ For full contents and more information, visit: www.routledge.com/9780367651268

TEXTBOOK

Introduction to Fluid Dynamics in Physics and Astrophysics



Hendrik Jan van Eerten

This textbook provides an accessible and self-contained introduction to the physics behind fluid dynamics; exploring the laws of nature describing three out of four fundamental states of matter (liquids, gases, and plasmas). Based on years of teaching of fluid dynamics theory and computation at advanced undergraduate level, it provides readers with the tools to understand and model fluid dynamical systems across a wide range of applications, from dense liquids to dilute space plasmas.

CRC Press

Market: Physics

January 2024: 234x156: 326pp: 65 illus, 7 halftones, 58 line drawings

Pb: 978-0-367-55235-0: **£59.99**

★ For **full contents** and more information, visit: www.routledge.com/9780367552350

Writing In-House Medical Device Software in Compliance with EU, UK, and US Regulations



Philip S. Cosgriff and Matthew Memmott

This book is a comprehensive guide to producing medical software for routine clinical use. It is a practical guidebook for medical professionals developing software to ensure compliance with medical device regulations for software products intended to be sold commercially, shared with healthcare colleagues in other hospitals, or simply used in-house. It compares the latest regulatory requirements in different global territories, including the most recent EU regulations as well as current UK and US regulations.

CRC Press

Market: Physics

March 2024: 234x156: 272pp: 36 illus, 5 halftones, 31 line drawings

Pb: 978-1-032-29350-9: **£34.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032293509

TEXTBOOK • 2nd Edition

XAFS for Everyone

Scott Calvin, Lehman College, New York; Sarah Lawrence College, Bronxville, New York, USA

XAFS for Everyone provides a practical, thorough guide to x-ray absorption fine-structure (XAFS) spectroscopy for both novices and seasoned practitioners from a range of disciplines. This second edition now includes chapters on spatial and temporal resolution, alternative measurement modes including resonant inelastic x-ray scattering (RIXS) and high-energy resolution fluorescence detection (HERFD), and an expanded chapter on experimental design. In addition, this edition adds new sections on wavelet transforms, blind source separation, free electron lasers, and theoretical XANES standards, as well as three new case studies.

CRC Press

Market: Physics

July 2026: 280x210: 336pp: 226 illus, 10 halftones, 216 line drawings

Pb: 978-0-367-34567-9: **£42.99**

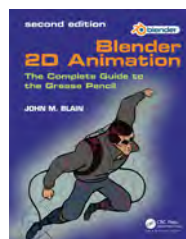
Prev. Ed Pb: 978-1-4398-7863-7

★ For **full contents** and more information, visit: www.routledge.com/9780367345679

2nd Edition

Blender 2D Animation

The Complete Guide to the Grease Pencil



John M. Blain, Toormina, New South Wales, Australia

This book describes how to access the Grease Pencil component in Blender and create 2D Animation within the Blender 3D environment. It is assumed that the reader has no previous knowledge of the Blender program and treats 2D Animation using the Grease Pencil as a standalone application. Grease Pencil is a component of the 3D modeling and animation program, Blender. Blender is a free open-source 3D Computer Graphics software toolset used for creating animated films, visual effects, art, 3D printed models, motion graphics, interactive 3D applications, virtual reality and computer games.

A K Peters/CRC Press

Market: Computer Graphics & Animation

March 2024: 254x178: 216pp: 839 illus, 556 halftones, 283 line drawings

Pb: 978-1-032-64979-5: **£58.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032649795

Directing Game Animation

Building a Vision and a Team with Intent



Mike Jungbluth

Directing Game Animation: Building a Vision and a Team with Intent breaks down the process on how to create an intentional animation vision, that can be both unique and flexible. From defining the high-level experience, to breaking down tech needs, projecting a team size and empowering everyone to work together, this book will help to wrap your arms around a project's animation needs.

CRC Press

Market: Games & Animation

March 2024: 229x152: 240pp: 72 illus, 72 halftones

Pb: 978-1-032-41078-4: **£39.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032410784

Game AI Uncovered

Volume One



Edited by **Paul Roberts**

Game AI Uncovered: Volume One kicks off a brand-new series of books that focus on the development of artificial intelligence in video games. This volume brings together the collected wisdom, ideas, tricks and cutting-edge techniques from 20 of the top game AI professionals and researchers, from around the world. Beginners to the area of game AI, along with professional developers, will find a wealth of knowledge that will not only help in the development in your own games but will spark ideas for new approaches.

CRC Press

Market: Game Development

February 2024: 234x156: 216pp: 86 illus, 6 halftones, 80 line drawings

Pb: 978-1-032-34323-5: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032343235

Game Design Deep Dive

Soulslike



Joshua Bycer

For this entry in the Game Design Deep Dive series, it's Joshua Bycer takes a look at how the "soulslike" genre with its unique design, became popular over the 2010's and culminating with one of the bestselling games of 2022 with Elden Ring.

CRC Press

Market: Gaming

May 2024: 229x152: 200pp: 97 illus, 97 halftones

Pb: 978-1-032-58115-6: **£38.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032581156

Mathematics of Game Development

A Collection of Applied Lessons



Jacob Enfield, George Mason University, Virginia Serious Game Institute, USA

This introductory textbook introduces students to mathematical concepts and helps them to understand how they apply to the field of game development. The book covers mathematical concepts commonly used in game development while providing application of the concepts in the industry-standard Unity game engine. This book will be ideal for any game development student looking to gain a grounding in the most relevant mathematical concepts to support their trade. It will also be useful as a stepping stone to digesting more advanced mathematical concepts for game development.

CRC Press

Market: Game Development

April 2024: 254x178: 320pp: 430 illus, 303 halftones, 127 line drawings

Pb: 978-0-367-52771-6: **£52.99**

★ For **full contents** and more information, visit: www.routledge.com/9780367527716

3rd Edition

Rig it Right!

Maya Animation Rigging Concepts



Tina O'Hailey

Rig it Right! breaks down rigging so that you can achieve a fundamental understanding of the concept. The author will get you up and rigging with step-by-step tutorials covering multiple animation control types, connection methods, interactive skinning, BlendShapes, edgeloops, and joint placement, to name a few. *Rig it Right!* will take you to a more advanced level where you will learn how to create stretchy rigs with invisible control systems and use that to create your own types of rigs.

CRC Press

Market: Games & Animation

March 2024: 254x178: 328pp: 242 illus, 242 halftones

Pb: 978-1-032-55523-2: **£39.99**

Prev. Ed Pb: 978-1-138-30316-4

★ For **full contents** and more information, visit: www.routledge.com/9781032555232

Tabletop Game Accessibility

Meeple Centred Design



Michael James Heron, Chalmers University of Technology / University of Gothenburg, Sweden

This foundational resource on the topic of tabletop game accessibility provides actionable guidelines on how to make games accessible for people with disabilities. The book contextualizes this practical guidance within a philosophical framework of how the relatively abled can ethically address accessibility issues within game design. This book will be of great interest to all professional tabletop and boardgame designers, as well as digital game designers and designers of other physical products.

CRC Press

Market: Game Design

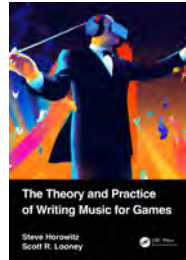
April 2024: 234x156: 232pp: 136 illus, 133 halftones, 3 line drawings

Pb: 978-1-032-54159-4: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032541594

TEXTBOOK

The Theory and Practice of Writing Music for Games



Steve Horowitz and **Scott R. Looney**, Game audio and game scoring instructor at Pyramid Training and part-time faculty at Academy of Art University

Based on years of working in the field, as well as teaching the subject at colleges and universities, *The Theory and Practice of Writing Music for Games* is an invaluable resource for those looking for a classroom tested, directed course of study. Each chapter builds on the next and guides the reader step by step through the essentials. Along with all the theory, a multitude of clearly defined hands-on projects and exercises are included, designed to prepare the reader to go out into the field with a complete understanding of the art and craft of music

composition for games and visual media.

CRC Press

Market: Games and Animation

January 2024: 254x178: 244pp: 62 illus, 56 halftones, 6 line drawings

Pb: 978-1-032-53863-1: **£59.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032538631

Advances in Terahertz Source Technologies



Gun-Sik Park, Masahiko Tani, Jae-Sung Rieh and Sang Yoon Park

This book focuses on the advances in terahertz source technologies both from photonics and electronics (solid-state and vacuum-state) points of view. Written in a noncomplicated language, the book will be useful for a broad spectrum of readers, including advanced undergraduate- and graduate-level students in electronics and photonics, researchers in various disciplines in physics, chemistry, biology, astronomy, and electrical engineering, system engineers in various industrial sectors, general readers, and those who are interested in the interaction between electromagnetic waves and matters and in the effects of electromagnetic waves on matters.

Jenny Stanford Publishing

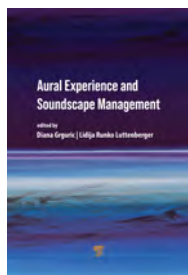
Market: Lasers, Optics & Photonics

April 2024: 229x152: 772pp: 318 illus, 19 halftones, 299 line drawings

Hb: 978-981-4968-89-8: **£154.00**

★ For full contents and more information, visit: www.routledge.com/9789814968898

Aural Experience and Soundscape Management



Edited by Diana Grgurić and Lidija Runko Luttenberger

Sound and music became relevant from the perspective of management, within the meaning of both controlling their negative effects on human beings and their environment and utilizing them for meeting human needs. In an interdisciplinary approach that integrates three scientific fields—technical, social, and humanities—the challenges of noise control from the perspective of acoustic ecology are defined. The concept of acoustic ecology is applied to evoke sound and music management and design solutions for the benefit of well-being.

Jenny Stanford Publishing

Market: Acoustical Engineering

March 2024: 229x152: 232pp: 26 illus

Hb: 978-981-5129-03-8: **£91.99**

★ For full contents and more information, visit: www.routledge.com/9789815129038

Climatic Chaos



Paul T. Anastas and Urvashi Bhatnagar

This book encapsulates a comprehensive arc—from science to solution—demonstrating the immediacy of the impact of climate change on our everyday lives to breakthrough solutions that will truly move the needle on this issue. This book offers a highly rationale and detailed look at the science and effects of climate change and communicates these changes through stories that make the issue personal and crucial. The authors, through green chemistry and engineering-based solutions, elucidate how mutual power of the leaders and individuals can advance innovative sustainable practices.

Jenny Stanford Publishing

Market: Climate Change

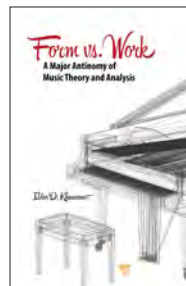
March 2024: 229x152: 300pp

Hb: 978-981-4968-26-3: **£45.99**

★ For full contents and more information, visit: www.routledge.com/9789814968263

Form vs. Work

A Major Antinomy of Music Theory and Analysis



Ildar D. Khannanov

This book covers the events related to the binary opposition of form vs. work, that is, the interaction of formalists and integralists. It also presents the history and evolution of the Soviet music theory viewed from the standpoint of an insider. Russian and Soviet theorists approached the same urgent problems as their Western counterparts, including form vs. work. The Russian and Soviet traditions have always been very conservative. Quite paradoxically, reading the texts of the Russian music theory may allow us to restore, or at least to revisit, some valuable concepts and approaches that were abandoned during the revolutionary events in the Western music theory.

Jenny Stanford Publishing

Market: Music Theory

February 2024: 229x152: 338pp: 79 illus

Hb: 978-981-5129-01-4: **£76.99**

★ For full contents and more information, visit: www.routledge.com/9789815129014

2nd Edition

Organic and Printed Electronics

Fundamentals and Applications

Edited by Giovanni Nisato, Centre Suisse d'Electronique et de Microtechnique SA, Muttenz, Switzerland, Donald Lupo and Simone Rudolf, Technische Universitat Darmstadt, Germany

This book provides a comprehensive introduction to organic flexible and printed electronics, their fundamental aspects, core technologies, and applications and is authored by international expert practitioners in the field. As a key reference resource, it is specifically designed to address students in their final undergraduate or beginning graduate studies, as well as engineers and general readers interested in approaching this field from an application perspective.

Jenny Stanford Publishing

Market: Microelectronics

April 2024: 229x152: 700pp

Hb: 978-981-5129-14-4: **£131.00**

Prev. Ed Hb: 978-981-4669-74-0

★ For full contents and more information, visit: www.routledge.com/9789815129144

Solar Decathlon

Building a Renewable Energy

Melissa DiGennaro King and Richard James King

This book is an inspirational story about how an unusual idea got started, hit the ground running, and took flight. Solar Decathlon (SD) was created in response to the need for innovative solutions to address a global problem: fossil-fuel dependence as a contributing factor in climate change. It includes first-person perspectives from 40 contributing writers who participated in the SD program, the experiences of which strongly impacted the personal and professional lives of many of them.

Jenny Stanford Publishing

Market: Architecture

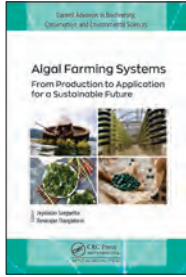
April 2024: 229x152: 590pp: 498 illus

Hb: 978-981-5129-13-7: **£76.99**

★ For full contents and more information, visit: www.routledge.com/9789815129137

Algal Farming Systems

From Production to Application for a Sustainable Future



Edited by **Jeyabalan Sangeetha** and **Devarajan Thangadurai**

Series: Current Advances in Biodiversity, Conservation, and Environmental Sciences

Presents the latest technological innovations in algae production, market status, and prospects for algal applications. It overviews different perspectives on the commercial production of algae-based food, health, and high-value cosmeceutical products, providing an institutional framework to support and promote the development and commercialization of algal farming. The book discusses phycotechnology, presents new information on algal culture conditions and cultivation strategies, the industrial

applications of algae, green synthesis of nanoparticles from algae etc.

Apple Academic Press

Market: Marine & Aquatic Science

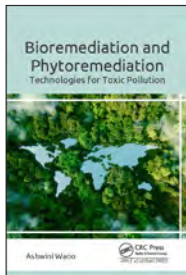
April 2024: 234x156: 432pp: 28 illus, 9 halftones, 19 line drawings

Hb: 978-1-77491-652-0: **£180.00**

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This 4-volume set provide in-depth coverage on the use of microbial bioremediation and phytoremediation to clean up pollutants in soil, such as pesticides, petroleum hydrocarbons, metals, and chlorinated solvents, which reduce the soil's fertility and renders it unfit for plant growth. Vol 1 covers the fundamental aspects and contaminated sites; vol 2 looks at microbial approaches and recent trends; vol 3 presents inventive techniques, research methods, and case studies; and vol 4 addresses degradation of pesticides and polychlorinated biphenyls.

Apple Academic Press

Market: Crop Science

2022: 234x156: 1710pp: 134 illus

Hb: 978-1-77463-720-3: **£500.00**

★ For **full contents** and more information, visit: www.routledge.com/9781774637203

2nd Edition

Green Chemistry

Fundamentals and Applications



Edited by **Suresh C. Ameta** and **Rakshit Ameta**

This second edition of the well-received *Green Chemistry: Fundamentals and Applications* addresses a diverse selection of topics in green chemistry, highlighting the potential and scope of green chemistry for clean and sustainable development. Covering the basics, the book discusses the benefits of environmentally friendly chemical practices and their use in industry. The book has been updated with new research, new advances, and timely references. Specific topics include eco-friendly products, green catalysts, ionic liquids, supercritical fluids, green solvents, photo-Fenton reaction, photocatalysis, sonochemistry, ultrasound-assisted reactions.

Apple Academic Press

Market: General Chemistry

May 2024: 234x156: 556pp: 35 illus

Hb: 978-1-77491-390-1: **£147.00**

Prev. Ed Hb: 978-1-926895-43-7

★ For **full contents** and more information, visit: www.routledge.com/9781774913901

Green Nanomaterials in Energy Conversion and Storage Applications



Edited by **Ishani Chakrabarty** and **Khalid Rehman Hakeem**

Addresses the energy challenge by discussing the various aspects of design, exploitation, and applications of green nanomaterials in energy devices—for energy efficiency, energy conversion, energy storage, and energy saving. The book also addresses the limitations that currently exist and how green nanomaterials can be the utilized as a future prospect towards a sustainable economy. The book emphasizes the importance and different modes of synthesis of nanomaterials, with detailed emphasis on green nanomaterials. Energy efficiency and environmental impact of the utilization of green nanomaterials as energy conversion devices are a major focus of the book.

Apple Academic Press

Market: Energy, Fuels & Petrochemicals

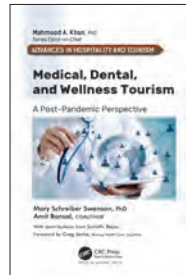
February 2024: 229x152: 266pp: 40 illus

Hb: 978-1-77491-388-8: **£131.00**

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Medical, Dental, and Wellness Tourism

A Post-Pandemic Perspective



Edited by **Mary Schreiber Swenson** and **Amit Bansal**

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Apple Academic Press

Market: Hospitality & Tourism Management

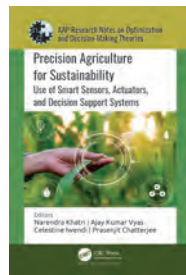
January 2024: 234x156: 308pp: 4 illus

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Use of Smart Sensors, Actuators, and Decision Support Systems



Edited by **Narendra Khatri**, **Ajay Kumar Vyas**, **Celestine Iwendi** and **Prasenjit Chatterjee**

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A comprehensive exploration of the state-of-the-art digital technological intervention for precision agriculture for sustainable development. It delves into how modern technologies—i.e., GPS, drones, image processing, artificial intelligence, machine learning, Internet of Things, and deep learning—are being used in agriculture to make it more farmer-friendly and more economically profitable. It discusses smart sensors, actuators, and decision support systems that

provide intelligent data about crop health and for monitoring for yield prediction, soil quality, and nutrition requirement prediction, etc.

Apple Academic Press

Market: Agriculture & Agronomy

February 2024: 234x156: 506pp: 273 illus, 106 halftones, 167 line drawings

Hb: 978-1-77491-373-4: **£147.00**

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