

## Guidewire Training Material

Written and edited by world leaders in nephrology, Comprehensive Clinical Nephrology, 6th Edition, by Drs. John Feehally, Jurgen Floege, Richard J. Johnson, and Marcello Tonelli, provides current information on clinical procedures and conditions as well as the scientific facts and pathophysiology that are foundational to nephrology practice. Ideal for practicing nephrologists, fellows, residents, and internists, it thoroughly covers fluids and electrolytes, hypertension, diabetes, dialysis, and transplantation, and more – all in a single convenient volume. A "just right" amount of basic science and practical clinical guidance helps you make efficient and informed decisions. More than 1,500 full-color illustrations highlight key topics and detail pathogenesis for a full range of kidney conditions and clinical management. New quick-reference boxes with links to clinical guidelines in all relevant chapters. New chapters on common issues regarding prescribing in kidney disease, palliative nephrology, endemic nephropathies, pathophysiology of chronic kidney disease, and outcomes of dialysis.

A full table of contents and downloadable sample pages are available on the publisher's web site at [micro-press.com](http://micro-press.com). If you want to learn V8i 3D SS3 MicroStation this is the manual for you! Used extensively by universities, colleges, schools, trainers, and individuals to teach or learn MicroStation, this MicroStation 3D Level 3 Training Manual guides users through MicroStation's 3D functions in clear, step-by-step instructions and exercises, using over 740 illustrations and screen captures. Dual English and metric units are used throughout. The instruction assumes that the user is familiar with the tools and techniques covered in the Level 1 and Level 2 manuals (or equivalent), and is ready to work with MicroStation's 3D drawing tools. As with the Level 1 and Level 2 manuals, you won't find a more user-friendly and effective 3D MicroStation manual that has Luxology rendering presented so clearly!

Since the debut of the Medicine Meets Virtual Reality (MMVR) conference in 1992, MMVR has served as a forum for researchers harnessing IT advances for the benefit of patient diagnosis and care, medical education and procedural training. At MMVR, virtual reality becomes a theatre for medicine, where multiple senses are engaged - sight, sound and touch - and language and image fuse. Precisely because this theatre is unreal, it is a valuable tool: the risks of experimentation and failure are gone, while the opportunity to understand remains. Improvement of this tool, through steady technological progress, is the purpose of MMVR. This book presents papers delivered at the MMVR18 / NextMed conference, held in Newport Beach, California, in February 2011, with contributions from international researchers whose work creates new devices and methods at the juncture of informatics and medicine. Subjects covered include simulation and learning, visualization and information-guided therapy, robotics and haptics, virtual reality and advanced ICT in Europe, validation of new surgical techniques, and many other applications of virtual-reality technology. As its name suggests, the NextMed conference looks forward to the expanding role that virtual reality can play in global healthcare. This overview of current technology will interest those who dedicate themselves to improving medicine through technology.

This textbook is a readily accessible educational tool for all fellows undertaking subspecialty training in interventional cardiology, while also serving as a refresher to early career interventional cardiologists. The key objective is to equip the reader with an evidence-based expert-led resource focussed primarily on pre-procedural planning, peri-procedural decision-making, and the salient technical aspects of performing safe and effective coronary intervention, the intention being to support the therapeutic decision-making process in the emergency room, coronary care unit or cath lab in order to optimize patient outcome. The Interventional Cardiology Training Manual provides readers with a step-by-step guide to the basic principles underpinning coronary intervention and facilitates rapid access to best practice from the experts, presented in a pragmatic, digestible and concise format. Uniquely, each chapter has been written in a heart center-specific manner, affording the reader an opportunity to learn how individual institutions perform a specific procedure, which algorithms and guidelines they follow and what evidence they draw on to instigate the best possible care for their patients.

The textbook provides an interdisciplinary and integrated perspective of modern vascular care. Written by experts the text proceeds from fundamental principles to advanced concepts. The book is divided into four parts, each focusing on different basic concepts of vascular care. All fundamental principles of the area are clearly explained to facilitate vascular diagnostics and treatment in clinical practice. It is aimed at junior practitioners and experts.

Visual Computing for Medicine, Second Edition, offers cutting-edge visualization techniques and their applications in medical diagnosis, education, and treatment. The book includes algorithms, applications, and ideas on achieving reliability of results and clinical evaluation of the techniques covered. Preim and Botha illustrate visualization techniques from research, but also cover the information required to solve practical clinical problems. They base the book on several years of combined teaching and research experience. This new edition includes six new chapters on treatment planning, guidance and training; an updated appendix on software support for visual computing for medicine; and a new global structure that better classifies and explains the major lines of work in the field. Complete guide to visual computing in medicine, fully revamped and updated with new developments in the field Illustrated in full color Includes a companion website offering additional content for professors, source code, algorithms, tutorials, videos, exercises, lessons, and more

The Practice of Interventional Radiology, by Dr. Karim Valji, presents a comprehensive approach to help you master the latest techniques. with coverage of neurointerventional procedures, image-guided non-vascular and vascular procedures, and interventional oncologic procedures, you'll have everything you need to offer more patients a safer alternative to open surgery.

This introduction to interventional radiology is written in a case-based format. Each case contains illustrations and legends

describing the imaging findings and technical details of each intervention. No other book covers the subject so succinctly. 2014 BMA Medical Book Awards Highly Commended in Radiology category! Image-Guided Interventions, a title in the Expert Radiology Series, brings you in-depth and advanced guidance on all of today's imaging and procedural techniques. Whether you are a seasoned interventionalist or trainee, this single-volume medical reference book offers the up-to-the-minute therapeutic methods necessary to help you formulate the best treatment strategies for your patients. The combined knowledge of radiology experts from around the globe provides a broad range of treatment options and perspectives, equipping you to avoid complications and put today's best approaches to work in your practice. "... the authors and editors have succeeded in providing a book that is both useful, instructive and practical" Reviewed by RAD Magazine, March 2015 Formulate the best treatment plans for your patients with step-by-step instructions on important therapeutic radiology techniques, as well as discussions on equipment, contrast agents, pharmacologic agents, antiplatelet agents, and protocols. Make effective clinical decisions with the help of detailed protocols, classic signs, algorithms, and SIR guidelines. Make optimal use of the latest interventional radiology techniques with new chapters covering ablation involving microwave and irreversible electroporation; aortic endografts with fenestrated grafts and branch fenestrations; thoracic endografting (TEVAR); catheter-based cancer therapies involving drug-eluting beads; sacroiliac joint injections; bipedal lymphangiography; pediatric gastrostomy and gastrojejunostomy; and peripartum hemorrhage. Know what to look for and how to proceed with the aid of over 2,650 state-of-the-art images demonstrating interventional procedures, in addition to full-color illustrations emphasizing key anatomical structures and landmarks. Quickly reference the information you need through a functional organization highlighting indications and contraindications for interventional procedures, as well as tables listing the materials and instruments required for each. Access the fully searchable contents, online-only material, and all of the images online at Expert Consult.

Edited and contributed to by leaders of radiology simulation-based training, this book is the first of its kind to thoroughly cover such training and education.

Consult this title on your favorite e-reader, conduct rapid searches, and adjust font sizes for optimal readability. The right amount of basic science and practical clinical guidance assists in making efficient and informed decisions. Extensive updates on key topics keep you at the forefront of the field. New chapters on glomerulonephritis associated with complement disorders, interventional treatments for hypertension, renal disease and cancer, and epidemiology and prognostic impact of acute kidney injury. Over 1,500 color illustrations highlight key topics and detail pathogenesis for a full range of kidney conditions and clinical management. Hundreds of color coded algorithms promote quick reference and to help you retain concepts. Over 400 NEW self-assessment questions available at Expert Consult.

This text captures the global standards of bariatric surgery practice at a time of change, excitement, and lots of controversy. The text sheds the light on best practices globally by providing a reliable reference to guide the practicing physician anywhere in the world, and from whatever specialty (surgeon, gastroenterologist or endoscopist) to navigate through the many current options of therapy in this rapidly changing field. The text provides high definition illustrations of these techniques to go with the didactic chapters written by the thought leaders in the field. In addition to the technical part, an important part of the book focuses on quality and outcome measures. The rapid growth and innovations impose the need for strict guidelines and quality control. Thought leaders who created the concept of "Centers of Excellence" shed light on outcome measures and different ways to monitor quality. This will appeal to administrators and different ancillary service providers. The medical section plays a major role as combination therapy seems to be the future. An entire section is dedicated to medical weight management with discussions of the dietary and psychological component of care. The text also provides a dedicated discussion of the metabolic aspect of bariatric surgery, cosmetic surgery and issues of training future surgeons. These features differentiate the book from others that only discuss the surgical component, and will broaden the level of interest to all who are involved in the management of this complex disease.

The three-volume set of LNCS 11953, 11954, and 11955 constitutes the proceedings of the 26th International Conference on Neural Information Processing, ICONIP 2019, held in Sydney, Australia, in December 2019. The 173 full papers presented were carefully reviewed and selected from 645 submissions. The papers address the emerging topics of theoretical research, empirical studies, and applications of neural information processing techniques across different domains. The first volume, LNCS 11953, is organized in topical sections on adversarial networks and learning; convolutional neural networks; deep neural networks; feature learning and representation; human centred computing; human centred computing and medicine; hybrid models; and artificial intelligence and cybersecurity.

Combining experts from the medical and materials sciences, the Institute considered current concepts in medical and materials sciences as they relate to implantable prostheses in orthopedic surgical practice. The syllabus included theory and applications of materials properties, physiological function, and host response to metal and non-metal materials. Total hip prostheses are the most common orthopedic device implanted today involved in over 200,000 operations. Failures occur at the rate of 10--40% at ~ to 10 years. Failures are due to loosening, infection, fracture of femoral components, or destruction of the pelvic components. All these, and other problems related to the implantation of the devices, the surgical procedures, and device pathology, were discussed in light of current, as well as, emerging technologies and scientific knowledge. Repeatedly, scientists designing prostheses became aware of a lack of understanding of physiological phenomena associated with biocompatibility; the interchange among practising physicians, basic scientists, and pathologists at this Institute was appreciated. We thank all the contributors and participants for their effort. Thanks are also due to the personnel of the Scientific Affairs Division of NATO. The daily routines of running the Institute were greatly facilitated by the efforts of Pedro Cuevas, M.D, Jose Gutierrez Diaz, M.D, and Dr. Hanita Kossowsky. The devoted help of Nir Kossovsky, M.D, in setting the conference and in editing this book, is sincerely appreciated.

This text provides a comprehensive review of ERCP and EUS and the clinical conditions for which they are employed. Presented in a case-based format with accompanying videos, it will serve as a valuable practical clinical resource for gastroenterologists with an interest in ERCP and EUS. The text highlights major techniques involved in ERCP, reviews complications and recent data on preventing post-ERCP pancreatitis, and discusses important issues in training in ERCP including use of endoscopic simulators and assessment of competency as emphasized in the new ACGME guidelines. For biliary diseases, new techniques for managing biliary stones, novel technologies for diagnosing indeterminate biliary strictures, and new devices for treating benign and malignant strictures are also highlighted. For pancreatic diseases, advances in minimally invasive endoscopic techniques for pancreatic

stones and strictures, and management of the complications of pancreatitis are reviewed. Furthermore, ERCP is not limited by age, pregnancy or history of abdominal surgeries and special considerations particular to these patient populations are also discussed. The EUS chapters review the breadth of equipment available for performing EUS and EUS-FNA, detail the technique of performing EUS-FNA, and explore pertinent issues with training and assessing competency analogous to ERCP training. Valuable insights on the basics of cytopathology relevant to the endosonographer are summarized. The classic indication for EUS of staging luminal cancers is examined in detail while pancreaticobiliary indications are discussed highlighting newer adjunctive technologies including elastography and contrast-enhanced EUS. Although in its infancy, the brave new world of therapeutic EUS is explored with a focus on endoscopic necrosectomy, EUS-guided biliary and pancreatic access as well as the exciting possibilities of EUS-guided radiofrequency ablation and injection of anti-tumor agents. ERCP and EUS: A Case Based Approach will serve as a very useful resource for physicians who perform or refer patients for ERCP and EUS. It provides a concise yet comprehensive summary of the current status of ERCP and EUS that will help guide patient management and stimulate clinical research. ? Sponsored jointly by the American Society of Mechanical Engineers and International Material Management Society, this single source reference is designed to meet today's need for updated technical information on planning, installing and operating materials handling systems. It not only classifies and describes the standard types of materials handling equipment, but also analyzes the engineering specifications and compares the operating capabilities of each type. Over one hundred professionals in various areas of materials handling present efficient methods, procedures and systems that have significantly reduced both manufacturing and distribution costs.

Traumatic injury of the spinal cord affects the entire organism directly and indirectly. Primary injury destroys neurons and severs axons which participate in neural circuits. Secondary injuries and pathologies arise from numerous sources including systemic inflammation, consequential damage of cutaneous, muscular, and visceral tissues, and dysregulation of autonomic, endocrine and sensory- motor functions. Evidence is mounting that spinal cord injury (SCI) affects regions of the nervous system spatially remote from the injury site, as well as peripheral tissues, and alters some basic characteristics of primary afferent cell biology and physiology (cell number, size/frequency, electrophysiology, other). The degree of afferent input and processing above the lesion is generally intact, while that in the peri-lesion area is highly variable, though pathologies emerge in both regions, including a variety of pain syndromes. Primary afferent input to spinal regions below the injury and the processing of this information becomes even more important in the face of complete or partial loss of descending input because such spared sensory processing can lead to both adaptive and pathological outcomes. This issue hosts review and research articles considering mechanisms of plasticity of primary afferent neurons and sensory processing after SCI, and how such plasticity contributes to sparing and/or recovery of functions, as well as exacerbation of existing and/or emergent pathologies. A critical issue for the majority of the SCI community is chronic above-, peri-, and below-level neuropathic pain, much of which may arise, at least in part, from plasticity of afferent fibers and nociceptive circuitry. For example, autonomic dysreflexia is common hypertensive syndrome that often develops after SCI that is highly reliant on maladaptive nociceptive sensory input and processing below the lesion. Moreover, the loss of descending input leaves the reflexive components of bladder/bowel/sexual function uncoordinated and susceptible to a variety of effects through afferent fiber plasticity. Finally, proper afferent feedback is vital for the effectiveness of activity-dependent rehabilitative therapies, but aberrant nociceptive input may interfere with these approaches since they are often unchecked due to loss of descending modulation.

The Interventional Cardiology Training Manual Springer

Endovascular Technology is a compilation of presentations on topics relating to endovascular topics from the last five symposia sponsored by the Division of Vascular Surgery at the Feinberg School of Medicine, Northwestern University in Chicago, Illinois. The Modern trends in Vascular Surgery series brings together the best, current strategies for therapeutic and clinical practices. These books contain the latest discoveries, techniques, practice and out comes in vascular surgery. There are approximately 25 to 45 chapters in each book, classified under the following headings: cerebrovascular, ischemia, infrainguinal lesions, aortic aneurysm, thoracic aortic pathology, aorta and its major branches, upper extremity ischemia, venous disorders, hemodialysis access, endovascular technology, noninvasive test, and issues in vascular surgery. Each of the chapters contains valuable illustrations, tables, and a list of references to guide the reader through the chapter. This series of books focus on specific topics in vascular surgery. For each title the editors will assume the responsibility of adding the latest information and new chapters and to update all of the content, thus making these books more cohesive and with newer, up-to-date information. The resulting product is a comprehensive review of current knowledge across all of vascular surgery, covering: Carotid Artery Diseases, Surgery of the Aorta, Venous Disorders, Endovascular technology and Ischemic Extremities.

This advanced 3D Level 3 manual, as all manuals in the series, is written for self-directed training. You can easily teach yourself 3D MicroStation using the step-by-step instruction and the available exercises you will find at [micro-press.com/resources](http://micro-press.com/resources). This manual assumes the user has successfully completed the 2D Levels 1 and 2 Manuals (or equivalent) and is ready to work with the more complex MicroStation 3D functions. A full table of contents, downloadable sample pages, and working screen captures are available on the publisher's web site at [micro-press.com](http://micro-press.com). If you want to learn V8i 3D SS3 MicroStation this is the manual for you! Used extensively by universities, colleges, schools, trainers, and individuals to teach or learn MicroStation, this MicroStation 3D Level 3 Training Manual guides users through MicroStation's 3D functions in clear, step-by-step instructions and exercises, using over 740 illustrations and screen captures. Dual English and metric units are used throughout. As with the Level 1 and Level 2 manuals, you won't find a more user-friendly and effective 3D MicroStation manual that has Luxology rendering presented so clearly!

Venous access devices are necessary for any patient requiring repeated blood sampling, parenteral nutrition, chemotherapy, antibiotic therapy or other IV treatments to be delivered in the hospital setting or at home. In the last decade, ultrasound-guided PICCs and Midline catheters – inserted by adequately trained physicians or nurses - have suddenly and widely spread in the field of venous access devices all over the world. The introduction and diffusion of PICCs in Italy has been historically linked to the GAVeCeLT association (the Italian Group of Long Term Venous Access Devices) and particularly to the authors' scientific and didactic activity. This volume examines the clinical indications for these devices and illustrates the details of their insertion and management in several clinical settings. Furthermore, all the specifications regarding the materials to use and all the aspects related to device removal and replacement, as well as the different strategies for complications prevention, are thoroughly discussed.

Plant engineers and warehouse managers can turn to this practical handbook for complete guidance on the many aspects of material handling and product movement. Written by a team of experts, the book provides the procedures, techniques, insights, and tips needed to design, organize, operate, and maintain an efficient, cost-effective material handling/product movement system. This how-to-reference covers horizontal and vertical transportation methods for items of all sizes; discusses product security, identification systems, and the selection of consultants; and features scores of helpful illustrations, forms, and tables. This book constitutes the refereed proceedings of the 4th International Symposium on Biomedical Simulation, ISBMS 2008, held in London, UK, in July 2008. The 19 revised full papers and 7 poster papers presented were carefully reviewed and selected from numerous submissions. The papers are organized in four different sections corresponding to key areas and techniques of this constantly expanding field: finite element modeling, mass spring and statistical shape modeling, motion and fluid modeling and implementation issues. An additional section covers the posters presented at the meeting.

Nickel-Titanium alloys are smart materials exhibiting unique properties such as superelasticity and shape-memory effect. The material has been used as orthodontic wires in the dental field for over 20 years. This book is a comprehensive overview to the field of Ni-Ti Materials and the physical, chemical and mechanical properties of this versatile alloy. In addition, complications and challenges exhibited in applications are also discussed.

Radiology 101 is a popular introduction to radiologic anatomy, the imaging manifestations of common disease processes, and what imaging studies to use when. The first section addresses basic principles of the various imaging modalities, while the second section deals with imaging of body regions plus, contains a chapter on nuclear imaging. Each chapter starts with a brief outline and ends with key points. Great depictions of normal anatomy and common pathology help guide those seeking a basic understanding of radiology especially interns and radiology residents, and non-radiology professionals desiring a concise overview of the field, such as nurse practitioners, physician assistants and primary-care physicians. Emphasis is placed on plain-film imaging with CT, MRI & Ultrasound included. Plus, there are numerous tables for typical symptoms, causes and differential diagnosis of common diseases and disorders. New for this edition:

- Book is 4-color for first time with new anatomic variants added to each chapter
- Inside cover lists common acronyms and treatment of acute contrast media reactions
- Discussion of biopsy of thyroid nodules (procedure commonly ordered by primary-care providers)
- Expanded nuclear imaging section to include basics of PET/CT
- New chapters on radiation protection/dose reduction and medical decision-making

Endoscopy is the primary diagnostic method for GI complaints and is replete with an ever expanding array of therapeutic capabilities. Successful Training in Gastrointestinal Endoscopy will provide all gastroenterologists with the exact set of skills required to perform endoscopy at the highest level. GI trainees will find it a crucial primer for learning endoscopy; teachers will find it a guide to understand how best to develop the expertise of their students; and experienced practicing gastroenterologists will find it a useful refresher tool to brush up on their existing endoscopic skills and to familiarise themselves with new procedures, including issues of safety and competence while performing them. With contributions from internationally recognized leaders in endoscopy education and an endorsement by the World Organisation of Digestive Endoscopy, each chapter will examine the specific skill sets and procedure related tasks which must be mastered when learning a particular technique, including: Specific descriptions of accessories required Standard training methods for the procedure Optimal utilization of novel learning modalities such as simulators Quality measures and objective parameters for competency Available tools for assessing competency once training has been completed In addition to the 400 high-quality, outstanding colour photos, the book will come with a DVD containing over 130 annotated teaching videos of both actual procedures and ex-vivo animal model simulations. These videos will illustrate, in a step by step fashion the proper techniques to be followed, highlighting clinical pearls from the experts and the most common mistakes to avoid. Successful Training in Gastrointestinal Endoscopy will be a key purchase for all gastroenterologists, whether in training or experienced, to allow them to develop and perfect their endoscopic skills. It will be a particularly useful guide for those interested in mastering the latest new techniques and procedures and an essential reference for teachers of endoscopy and students alike. Note: DVD and other supplementary materials are not included as part of eBook file. These materials are available for download upon purchase.

Douglas P. Beall, MD, summarizes the early experiences of established clinicians to create a compendium of everything you need to know during your formative years in radiology. Written for radiology residents and fellows and newly minted radiologists, the Radiology Sourcebook provides vital professional information and sound guidance on such critical issues as resident employment, Board examinations and test results, review courses, fellowships, and CAQs, as well as practical advice on finding a job and what you should know about your professional contract. The book also offers the radiology trainee a proven framework for performing basic procedures in general radiology, understanding the tools and instruments essential to those procedures, obtaining the images needed to make a diagnosis, and reporting the examination once they have been obtained.

Peritoneal dialysis (PD) is in widespread use for the treatment of acute and chronic renal failure. A considerable amount of knowledge about the various procedures and problems associated with this form of treatment has accumulated over recent years, particularly since the introduction of continuous ambulatory peritoneal dialysis (CAPD). However to date the information regarding the more technical or practical aspects of PD has been largely scattered in various books and journals. There appears to be no straightforward text concerned with these points suitable for recommending to junior doctors or nurses dealing with patients receiving this therapy. Though in-house-training is of considerable value it takes time and I have noticed that on a number of occasions in our own unit, technical problems with PD have not been dealt with quickly because of lack of knowledge in the staff on duty. There thus appeared to me to be a need for a short book giving firm advice on how to perform the various procedures and how to deal with problems as they arose. This manual is an attempt to fulfil that aim. Initially it was tried and tested on the renal unit in the Cardiff Royal Infirmary for 3 years. Prior to publishing it has been extensively revised and updated.

Advanced Caregiving Manual: A Compact, Complete Guide Covering All Levels of Patient Care for the Elderly By: Barb J. Garrod Written as a training manual for those who care for others, this book contains many sections to make you to the best possible caregiver. There are ready reference pages as well as some to use to help compile custom client charts. Garrod supplies information on medical abbreviations, chronic conditions, and overall tips she's gathered along her career path. She enjoyed providing seniors with the best possible care, and this book allows her to educate others.

Introducing Cardiovascular Intervention, a comprehensive companion volume to Braunwald's Heart Disease. This medical reference book contains focused chapters on how to utilize cutting-edge interventional technologies, with an emphasis on the latest protocols and standards of care. Cardiovascular Intervention also includes late-breaking clinical trials, "Hot off the Press"

commentary, and Focused Reviews that are relevant to interventional cardiology. View immersive videos from an online library of procedural clips located on Expert Consult. Remain abreast of the newest interventional techniques, including next-generation stents, invasive lesion assessment, and methods to tackle complex anatomy. Provide optimal patient care with help from easy-to-access information on the latest diagnostic and treatment advances, discussions on percutaneous approaches to structural heart disease, and new developments in treating heart valve disease.

*Biocompatibility and Performance of Medical Devices, Second Edition*, provides an understanding of the biocompatibility and performance tests for ensuring that biomaterials and medical devices are safe and will perform as expected in the biological environment. Sections cover key concepts and challenges faced in relation to biocompatibility in medical devices, discuss the evaluation and characterization of biocompatibility in medical devices, describe preclinical performance studies for bone, dental and soft tissue implants, and provide information on the regulation of medical devices in the European Union, Japan and China. The book concludes with a review of histopathology principles for biocompatibility and performance studies. Presents diverse insights from experts in government, industry and academia Delivers a comprehensive overview of testing and interpreting medical device performance Expanded to include new information, including sections on managing extractables, accelerating and simplifying medical device development through screening and alternative biocompatibility methods, and quality strategies which fasten device access to market

This book focuses on the importance of human factors in optimizing the learning and training process. It reports on the latest research and best practices and discusses key principles of behavioral and cognitive science, which are extremely relevant to the design of instructional content and new technologies to support mobile and multimedia learning, virtual training and web-based learning, among others, as well as performance measurements, social and adaptive learning and many other types of educational technologies, with a special emphasis on those important in the corporate, higher education, and military training contexts. Based on the AHFE 2018 Conference on Human Factors in Training, Education, and Learning Sciences, held July 21–25, 2018 in Orlando, Florida, USA on July 21–25, 2018, the book offers a timely perspective on the role of human factors in education. It highlights important new ideas and will fosters new discussions on how to optimally design learning experiences.

Machine intelligence will eclipse human intelligence within the next few decades - extrapolating from Moore's Law - and our world will enjoy limitless computational power and ubiquitous data networks. Today's iPod® devices portend an era when biology and information technology will fuse to create a human experience radically different from our own. Already, our healthcare system now appears on the verge of crisis; accelerating change is part of the problem. Each technological upgrade demands an investment of education and money, and a costly infrastructure more quickly becomes obsolete. Practitioners can be overloaded with complexity: therapeutic options, outcomes data, procedural coding, drug names etc. Furthermore, an aging global population with a growing sense of entitlement demands that each medical breakthrough be immediately available for its benefit: what appears in the morning paper is expected simultaneously in the doctor's office. Meanwhile, a third-party payer system generates conflicting priorities for patient care and stockholder returns. The result is a healthcare system stressed by scientific promise, public expectation, economic and regulatory constraints and human limitations. Change is also proving beneficial, of course. Practitioners are empowered by better imaging methods, more precise robotic tools, greater realism in training simulators, and more powerful intelligence networks. The remarkable accomplishments of the IT industry and the Internet are trickling steadily into healthcare. The *Medicine Meets Virtual Reality* series can readily see the progress of the past fourteen years: more effective healthcare at a lower overall cost, driven by cheaper and better computers.

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