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Probiotic Bacteria and Postbiotic Metabolites: Role in Animal and Human Health 2020 This book covers all aspects of probiotic bacteria and their metabolites, as well as their role and significance in human and animal health. Given the role of probiotic bacterial strains in the production of short chain fatty acids, butyrate etc probiotics may be considered as an alternative approach for the prevention or treatment of intestinal dysbiosis, cancers, cardiovascular diseases, hypertension. Additionally, the significance of probiotics added in aquaculture systems for improving

health, performance and growth of aquatic organisms has been highlighted. In this book, the functional role of probiotics and their post-biotic metabolites in improving overall health status in man and animals, is discussed. It is a comprehensive compilation useful for researchers, academic veterinarians and students in the field of microbiology, food technology and biotechnology.

Atlas of Interventional Orthopedics Procedures, Sep 22 2021 The field of interventional orthopedics is changing the landscape of orthopedic care as patients seek less invasive options for treatment of common conditions like arthritis, rotator cuff tears, and degenerative disc disease. Offering easy-to-follow, step-by-step guidance on both peripheral joint and spinal procedures, Atlas of Interventional Orthopedics Procedures is the first reference to provide this practical content in an authoritative, user-friendly text. Abundantly illustrated and easy to read, it presents simple to advanced injection skills covering all orthopedic and physical medicine procedures using up-to-date imaging techniques. Presents foundational knowledge for interventional orthopedics as well as ultrasound and x-ray guided techniques for both peripheral joint and spinal procedures. Features nearly 1,000 high-quality images including fluoroscopy, MRIs, procedural images, and unique anatomical illustrations drawn by a physical medicine and rehabilitation physician. Covers new and old topics such as autologous orthobiologics, allogenic tissue grafts, prolotherapy, and principles of fluoroscopy and ultrasound injection techniques. Offers several ultrasound and fluoroscopy images for each procedure, as well as step-by-step descriptions and the authors' preferred techniques. Walks you through general injection techniques such as interventional spine procedures, peripheral joint injections, and spinal and peripheral ligament, tendon, and nerve techniques; advanced techniques include intraosseous injections, needle arthroscopy, perineural hydrodissection, and emerging interventional techniques. Provides an up-to-date review on regenerative medicine for musculoskeletal pathology from editors and authors who are leading physicians in the field. Focuses on the core tenets of interventional orthopedics, including injectates that can facilitate healing of musculoskeletal tissues, precise placement of those injectates into damaged structures using imaging guidance, and the eventual development of new tools to facilitate percutaneous tissue manipulation.

Gut Microbial Response to Host Metabolic Phenotypes, Sep 28 2022

The Welfare of Cattle, Dec 12 2020 This book covers all aspects of research into the welfare of veal and beef cattle, covering behavior, nutrition and feeding, housing and management, stockmanship, and stress physiology, as well as transport and slaughter. It also offers a detailed critical analysis of the main indicators of animal welfare and covers the main threats to animal welfare in modern cattle production systems.

Phage Therapy: A Practical Approach, Jan 27 2019 This book gives a detailed yet clear insight into the current state of the art of the therapeutic application of bacteriophages in different conditions. The authors bring in their practical expertise within their respective fields of expertise and provide an excellent overview of the potential and actual use of phage therapy. Topics like economic feasibility compared to traditional antibiotics and also regulatory issues are discussed in far detail. This volume is therefore a valuable resource for individuals engaged in the medical application of novel phage therapies.

Adams and Stashak's Lameness in Horses, Dec 31 2022 Provides a fully updated Seventh Edition of the classic gold-standard reference on equine lameness. This new edition of the go-to resource on equine lameness features updates throughout and more in-depth information on objective lameness assessment, sports medicine, rehabilitation, treatment options, and advanced imaging. With contributions from the world's leading authorities on the subject, the book covers functional anatomy, examination, imaging, lameness of the distal limb, proximal limb, and axial skeleton, principles of musculoskeletal disease, therapies, occupation-related conditions, lameness in young

horses, and farriery. More than 1,700 images support the text, making it an exhaustive reference on all aspects of lameness in horses. Now in its seventh edition, Adams and Stashak's Lameness in Horses continues to be the definitive resource on equine lameness for veterinary specialists, practitioners, interns, residents, and students alike. The book is supplemented with a companion website offering a plethora of "how-to" videos demonstrating a variety of different physical examination techniques, including palpation, hoof testing, flexion tests, and perineural and intrasynovial injection techniques. Offers a fully revised new edition of the classic text on equine lameness Includes more extensive information on objective lameness assessment, sports medicine, rehabilitation, treatment options and advanced imaging Features over 1,700 images to illustrate concepts described Written by internationally renowned experts in the field Includes access to companion website with "how-to" videos Adams and Stashak's Lameness in Horses is a must-reference for any practicing large animal and equine veterinarian, equine veterinary specialist, or veterinary student dealing with lameness in the horse.

**Prospects of Plant-Based Vaccines in Veterinary Medicine** 2019 This book provides an in-depth explanation of the advantages and current limitations of recombinant plant-made vaccines for use in veterinary medicine, including for livestock, pets, and wild animals. Written by top scientists in the field, it discusses the background to and latest scientific advances in plant-made vaccines for the most commonly targeted veterinary infections. With the recent high-profile research into recombinant plant-made therapeutics for Ebola and Zika viruses, it is likely that the products will be commercialized and widely used in the future. Plant-made therapeutics have a variety of advantages over those made in traditional systems; however, their most fruitful application may be in veterinary medicine, due to less stringent regulations and a greater need for low-cost products.

**Small Animal Cardiovascular Medicine** 19 2021 Cardiology is a rapidly growing specialty in veterinary medicine. SMALL ANIMAL CARDIOVASCULAR MEDICINE provides a comprehensive, illustrated explanation of anatomy, physiology, assessment, diagnosis and management of small animal cardiovascular health. An overview of pathophysiology and pharmacotherapy aids practitioners in identifying clinical abnormalities, determining the significance of the problem, determining treatment, and understanding the unresponsive patient. This book is an excellent resource for small animal veterinarians who need to know about the latest techniques in treating congenital and acquired cardiovascular problems. \* Presents a comprehensive treatment of cardiovascular problems in dogs and cats. \* Promotes better understanding of problems by providing thorough anatomy and physiology, pathophysiology, and pertinent discussions of pharmacokinetics. Incorporates systematic assessment guidelines, including history, physical exam, and the latest diagnostic tests. \* Provides a unique classification system for categorizing disease by functional alteration. \* Offers over 770 photos and illustrations to help explain complex principles. \* Features over 150 4-color illustrations on four 8-page inserts covering gross anatomy and state-of-the-art Doppler flow echocardiographic images.

**Feline Dermatology** Jul 09 2020 This richly-illustrated handbook covers all aspects of modern feline dermatology, from the approach to different signs and symptoms to the description of the etiology, pathogenesis, clinical manifestation, diagnosis and current treatment of each feline dermatological disease. Thus this manual serves as essential practical guide to the busy practitioner to quickly and surely tackle cats with dermatological conditions, and offers a current and complete reference for the feline veterinarian and the veterinary dermatologist.

**FMD Research: Bridging the Gaps with Novel Vaccines** Feb 25 2022

**Small Animal Laparoscopy and Thoracoscopy** May 05 2020 The newly revised Second Edition of Small Animal Laparoscopy and Thoracoscopy is a rigorous update of the first book to provide

comprehensive and current information about minimally invasive surgery in dogs and cats. With a focus on techniques in rigid endoscopy, the book also includes guidance on additional surgeries outside the abdomen and chest. New chapters describe newly developed surgical techniques, and existing chapters have been thoroughly updated. The authors include detailed stepwise instructions for each procedure, including clinical photographs. Pre-operative considerations, patient positioning, portal placement, and postoperative care are also discussed, with key points of consideration for each surgery. Purchasers of the book will also receive access to a companion website featuring video clips of the fundamental skills and surgical techniques described in the resource. The book offers: An introduction to laparoscopic suturing and knot tying with accompanying video tutorials; a thorough introduction to the equipment used in laparoscopic and thoracoscopic veterinary surgery, including imaging equipment, surgical instrumentation, energy devices, and stapling equipment; explanations of foundational techniques in laparoscopy, including laparoscopic anesthesia, access techniques, contraindications, complications, and conversion; Robust descriptions of fundamental techniques in thoracoscopy, including patient positioning, port placement, contraindications, complications, and conversion; Discussions of a wide variety of laparoscopic and thoracoscopic surgical procedures. *Small Animal Laparoscopy and Thoracoscopy* is an essential reference for veterinary surgeons, veterinary internal medicine specialists and residents, and small animal general practitioners seeking a one-stop reference for minimally invasive surgery in dogs and cats.

*Natural Feed Additives in Animal Nutrition – Their Potential as Functional Foods* Oct 24 2021  
*African Swine Fever* Jan 15 2021

*Marine Biochemistry* Aug 22 2021 This book provides the latest comprehensive methods for isolation and other novel techniques for marine product development. Furthermore, this book offers knowledge on the biological, medical, and industrial applications of marine-derived medicinal food substances. There has been a tremendous increase in the products derived from marine organisms for commercial application in industries every year. Functional foods of medicinal value are particularly in demand as new technology allows the stabilization of natural ingredients and their availability in pure forms to solve various human diseases. Marine flora and fauna have essential elements and trace minerals that nurture various hormones produced in the endocrine system to regulate their respective metabolisms, thereby providing a safe and healthy life to humans. The overall presentation and clear demarcation of the contents by worldwide contributions is a novel entry point into the market of medicinal foods from the sea. The exploration of marine habitats for novel materials is discussed throughout the book. The exploration and exploitation of the biochemistry of sea flora and fauna are limited, and this book extends the research possibilities into numerous marine habitats. Various approaches for extracting and applying the flora and fauna are discussed. This book will be of value to researchers, marine biotechnologists, and medical practitioners, due to the vast information, as well as industrial and medical applications of marine substances all in one place.

*The Equine Foot: Moving the Needle to Best Care*, an Issue of *Veterinary Clinics of North America: Equine Practice*, E-Book Aug 02 2022 *The Equine Foot: Moving the Needle to Best Care*, An Issue of *Veterinary Clinics of North America: Equine Practice*, E-Book

*Zoonotic Diseases: Their Hosts and Vectors* May 31 2022 Topic Editor Rubén Bueno Marí is employed by Lokimica Laboratorios. All other Topic Editors declare no competing interests with regard to the Research Topic subject.

*Improving Patient Care* Dec 02 2019 As innovations are constantly being developed within health care, it can be difficult both to select appropriate new practices and technologies and to successfully adopt them within complex organizations. It is necessary to understand the consequences of introducing change, how to best implement new procedures and techniques, how to evaluate

and to improve the quality of patient care. This comprehensive guide allows you to do just that. *Improving Patient Care*, 2nd edition provides a structure for professionals and change agents to implement better practices in health care. It helps health professionals, managers, policy makers and researchers to assess new techniques and select and implement change in their organizations. The new edition includes recent evidence and further coverage on patient safety and patient centred strategies for change. Written by an international expert author team, *Improving Patient Care* is an established standard text for postgraduate students of health policy, health services and health management. The strong author team are global professors involved in managing research and development in the field of quality improvement, evidence-based practice and guidelines, quality assessment and indicators to improve patient outcomes through receiving appropriate health care.

Mastitis Control in Dairy Herds Feb 02 2020 This is the second edition of the book, containing 14 chapters which focus on prevention and control of mastitis as well as on the different factors leading to mastitis resulting in poor milk quality. The book contains two appendices, the first contains a line chart and the second contains parlour audit. An index is also provided.

Advances for Prosthetic Technology Dec 14 2020 This book focuses on the advances in transtibial prosthetic technology and targets research in the evolution of the powered prosthesis such as the BiOM, which was derived from considerable research and development at the Massachusetts Institute of Technology. The concept of the book spans the historical evolution of prosthetic applications from passive to new and futuristic robotic prosthetic technologies. The author describes the reasons for amputation, surgical procedures, and an historical perspective of the prosthesis for the lower limb. It also addresses the phases and sub-phases of gait and compensatory mechanisms arising from a transtibial prosthesis and links the compensatory mechanisms to long-term morbidities. The gait analysis technologies for gait analysis central to prosthetic design and the inherent biomechanics factors for analysis are also explored. The book reports on recent-past to current-term applications of passive elastic prostheses. The core of the book deals with futuristic robotic prostheses including function and major subsystems, such as actuator technology, state machine control, and machine learning applications. Finally, the envisioned future trends in the prosthetic technology space are presented.

Rabies and Rabies Vaccines Oct 31 2019 This book reviews the recent advances in rabies research and rabies vaccine development. The reader is introduced to biology and pathology of the virus causing agents and the history of rabies vaccination. The book presents regional rabies prophylaxis programs and discusses vaccination strategies for wildlife and humans. Further, innate immune response as well as antibody response to rabies are examined. All chapters are written by renowned experts in rabies research, some of them part of the WHO Collaboration Centre for Rabies Surveillance and Research. The book targets researchers and health professionals working in Virology, Veterinary Medicine and Biomedicine.

Pet-Specific Care for the Veterinary Team Aug 29 2019 A practical guide to identifying risks in veterinary patients and tailoring their care accordingly Pet-specific care refers to a practice philosophy that seeks to proactively provide veterinary care to animals throughout their lives, to keep pets healthy and treat them effectively when disease occurs. *Pet-Specific Care for the Veterinary Team* offers a practical guide for putting the principles of pet-specific care into action. Using this approach, the veterinary team will identify risks to an individual animal, based on the particular circumstances, and respond to these risks with a program of prevention, early detection and treatment to improve health outcomes in pets and the satisfaction of their owners. The book combines information on medicine and management, presenting specific guidelines for appropriate medical interventions and material on how to improve the financial health of a veterinary practice.

the process. Comprehensive in scope, and with expert contributors from around the world, this book covers pet-specific care prospects, hereditary and non-hereditary considerations, customer service implications, hospital and hospital team roles, and practice management aspects of pet-specific care. It also reviews specific risk factors and explains how to use these factors to determine an appropriate level of care for veterinary care. This important book: Offers clinical guidance for accurately assessing risk factors for each patient Shows how to tailor veterinary care to address a patient's specific risk factors Emphasizes prevention, early detection, and treatment Improves treatment outcomes and provides solutions to keep pets healthy and well Written for veterinarians, technicians and nurses, managers, and customer service representatives, *Pet-Specific Care for the Veterinary Team* offers a hands-on guide to taking a veterinary practice to the next level of care.

**Small Animal Anesthesia Techniques** (Nov 05 2022) **SMALL ANIMAL ANESTHESIA TECHNIQUES** Concise, practical reference to the technical aspects of delivering anesthesia in small animal practice *Small Animal Anesthesia Techniques* offers quick reference to essential information for anesthetizing canine, feline, and exotic animal patients, presenting easy-to-follow protocols that support veterinary technicians and veterinary practitioners in safely and effectively delivering anesthesia in clinical practice. This book is highly unique in its quick reference, techniques-focused approach, making it ideal for all professionals seeking procedure-based coverage of the topic. Designed for fast access in the clinical setting, the text covers practical information on anesthesia plans, equipment, potential complications, and more. A companion website provides video clips, images, and worksheets. The Second Edition has been thoroughly updated throughout to reflect advances in equipment, knowledge, and trends, now covering anaphylaxis under anesthesia, options and alternatives in the face of drug shortages, feline and canine pain scales, reducing mortality associated with anesthesia, managing difficult intubations, the importance of gastroprotectants and use of antiemetic medications to combat vomiting, and other trending topics and areas of interest since the 2018 edition was published. Additional images, tables, and charts have also been added to further enhance the text. *Small Animal Anesthesia Techniques* also provides information on: Important concepts of anesthesia, including safety in anesthesia through practical steps like anesthesia checklists New and important advances in equipment, such as patient warming and difficult airway management equipment Relevant literature reviews of a multitude of drugs for use peri-operatively, including gabapentin for analgesia and liposomal encapsulated bupivacaine for long term wound desensitization New and emerging developments that an evolving veterinary practice demands, including those not yet popular in the mainstream *Small Animal Anesthesia Techniques* is a must-have reference for small animal veterinary technicians and practitioners. It is an extremely valuable resource both in the knowledge contained within and the highly practical guidelines for implementing concepts in the field to provide the best care to small animals of all types.

**Pain Management in Veterinary Practice** (May 19 2021) **Pain Management in Veterinary Practice** provides veterinary practitioners with the information needed to recognize and manage pain in a wide range of large, small, and exotic animal species. Encompassing acute, adaptive, and chronic, maladaptive pain, the book provides an up-to-date review of the physiology and pathophysiology of pain. *Pain Management in Veterinary Practice* offers specific strategies for addressing pain in various animal species, including local and regional analgesia, continuous rate infusions, and novel methods of analgesic drug delivery. With comprehensive information on the pharmacokinetic and pharmacodynamic characteristics of analgesic drugs, the book goes beyond pharmaceutical options to incorporate scientific information on techniques for complementary treatment, including physical therapy, acupuncture, chiropractic techniques, and nutritional strategies. *Pain Management in Veterinary Practice* is a valuable resource for developing pain management protocols in the

veterinary clinic.

Mesenchymal Stem Cell Therapy 17 2021 Over the past decade, significant efforts have been made to develop stem cell-based therapies for difficult to treat diseases. Multipotent mesenchymal stromal cells, also referred to as mesenchymal stem cells (MSCs), appear to hold great promise in regards to a regenerative cell-based therapy for the treatment of these diseases. Currently, more than 200 clinical trials are underway worldwide exploring the use of MSCs for the treatment of a wide range of disorders including bone, cartilage and tendon damage, myocardial infarction, graft-versus-host disease, Crohn's disease, diabetes, multiple sclerosis, critical limb ischemia and many others. MSCs were first identified by Friedenstein and colleagues as an adherent stromal cell population within the bone marrow with the ability to form clonogenic colonies in vitro. In regards to the biology associated with MSCs, there has been tremendous progress towards understanding the target population's phenotype and function from a range of tissue sources. Despite enormous progress, an overall increased understanding of MSCs at the molecular and cellular level, several critical questions remain to be answered in regards to the use of these cells in therapeutic applications. Clinically, both autologous and allogenic approaches for the transplantation of MSCs are being explored. Several of the processing steps needed for the clinical application of MSCs, including isolation from various tissues, scalable in vitro expansion, cell banking, dose preparation, quality control parameters, delivery methods and numerous others are being extensively studied. Despite a significant number of ongoing clinical trials, none of the current therapeutic approaches have, as yet, become a standard of care treatment. Although exceptionally promising, the clinical translation of MSC-based therapies is still a work in progress. The extensive number of ongoing clinical trials is expected to provide a clearer path forward for the realization and implementation of MSCs in regenerative medicine. Towards this end, reviews of current clinical trial results and discussions on relevant topics associated with the clinical application of MSCs are compiled in this book from the perspective of the leading researchers in this exciting and rapidly advancing field. Although not absolutely inclusive, we hope the chapters within this book can promote and enable a better understanding of the translation of MSCs from bench-to-bedside and inspire researchers to further explore this promising and quickly evolving field.

Textbook of Orthopedic Rheumatology 24 2021

Cell Biology and Translational Medicine, Volume 17 29 2022 Much research has focused on the basic cellular and molecular biological aspects of stem cells. Much of this research has been directed towards their potential for use in regenerative medicine applications, which has in turn spurred growing numbers of translational and clinical studies. However, more work is needed if the potential is to be realized for improvement of the lives and well-being of patients with numerous diseases and conditions. This book series 'Cell Biology and Translational Medicine (CBTMED)' as part of Springer Nature's longstanding and very successful Advances in Experimental Medicine and Biology book series, has the goal to accelerate advances by timely information exchange. Emerging and translational aspects of stem cells are covered in each volume. Outstanding researchers are recruited to highlight developments and remaining challenges in the basic research and clinical arenas. This current book is the 17th volume of a continuing series.

Interdisciplinary Approaches to Antimicrobial Use in Livestock Farming 2022

Novel Vaccine Technologies in Animal Health 26 2021

Assessing the Environmental Adaptation of Wildlife and Production Animals 2021 Wild animals under human care as well as domesticated farm production animals are often exposed to environmental changes (e.g., capture and transportation). Short-term or acute changes in physiological indices (e.g., heart rate, respiration, body temperatures, immune cells, and stress

hormonal biomarkers) provide crucial information regarding the responses of animals to novel environments, and they could provide crucial determining factors for the long-term health and welfare of animals. This Special Issue includes experimental research papers that demonstrate applications of physiological indices and welfare assessment methods (e.g., morphological and morphometric data, behavioural assessments, thermal profiles, and physiological markers) in a wildlife or production animal (e.g., rescued and rehabilitating animals, pets, competition animals, farm animals, and zoo animals), in response to environmental and management related factors. The goal is to provide examples of new research and techniques that can be used to monitor short- and long-term environmental adaptation of animals under human care.

**Canine Sports Medicine and Rehabilitation** **May 17 2021** Canine Sports Medicine and Rehabilitation, Second Edition offers a thoroughly revised and updated new edition of this gold standard reference for all aspects of sports medicine and rehabilitation, encompassing basic science and integrated veterinary and physical therapy approaches. Presents current, state-of-the-art information on sports medicine and rehabilitation in dogs Offers perspectives from an international list of expert authors Covers all topics related to veterinary care of the canine athlete and all dogs Includes illustrations and photographs throughout to demonstrate key concepts Provides case studies that set the information in context

**Manual of Small Animal Soft Tissue Surgery** **July 10 2020** Gain the benefit of 20 years' experience in small animal soft tissue surgery. In this book, Karen Tobias explains the tips and tricks that experienced surgeons use to make a procedure easier, faster and more successful. She provides concise, detailed and well-illustrated instructions on how to complete all the common procedures performed in small animal practice. Hundreds of high-quality color photographs and detailed line drawings are included to provide step-by-step instructions, giving you confidence when attempting these techniques. Key Features: Organized by procedure type and includes sections on surgery of the skin, abdomen, digestive system, reproductive tract, perineal, head and neck, and miscellaneous procedures Each chapter contains an introduction, tips for preoperative management, surgery, surgical techniques, and postoperative considerations A practical manual useful for small animal veterinarians at all stages of their training and career

**Atlas of Small Animal Wound Management and Reconstructive Surgery** **June 2021** Atlas of Small Animal Wound Management and Reconstructive Surgery, Third Edition is a full-color atlas that maintains the surgical focus of earlier editions while now presenting essential information on the principles of wound healing, wound management, and common wound complications. The new edition presents a wider variety of topics including skin fold disorders, urogenital surgery, new techniques, and an expanded chapter on facial reconstruction. It also features 40 new plate illustrations, new sections on bandage and splint techniques, and significant updates on wound healing physiology, equipment, and dressing materials.

**Fluid, Electrolyte, and Acid-Base Disorders in Small Animal Practice** **April 2020** The leading reference for the diagnosis and management of fluid, electrolyte, and acid-base imbalances in small animals, Fluid, Electrolyte, and Acid-Base Disorders in Small Animal Practice, 4th Edition provides cutting-edge, evidence-based guidelines to enhance your care of dogs and cats. Information is easy to find and easy to use, with comprehensive coverage including fluid and electrolyte physiology and pathophysiology and their clinical applications, as well as the newest advances in therapy and a discussion of a new class of drugs called vaptans. Lead author Stephen DiBartola is a well-known speaker and the "go-to" expert in this field, and his team of contributors represents the most authoritative and respected clinicians and academicians in veterinary medicine. Over 30 contributors represent the "cream of the crop" in small animal medicine, ensuring that this edition

provides the most authoritative and evidence-based guidelines. Scientific, evidence-based insights and advances integrate basic physiological principles into practice, covering patient evaluation, differential diagnosis, normal and abnormal clinical features and laboratory test results, approach to therapy, technical aspects of therapy, patient monitoring, assessing risk, and prediction of outcomes for each disorder. Hundreds of tables, algorithms, and schematic drawings demonstrate the best approaches to diagnosis and treatment, highlighting the most important points in an easy-to-use format. Drug and dosage recommendations are included with treatment approaches in the Electrolyte Disorders section. Clear formulas in the Fluid Therapy section make it easier to determine the degree of dehydration, fluid choice, and administration rate and volume in both healthy and diseased patients. Updated chapters cover the latest advances in fluid therapy in patient management, helping you understand and manage a wide range of potentially life-threatening metabolic disturbances. Expanded Disorders of Sodium and Water chapter includes information on a new class of drugs called vaptans, vasopressin receptor antagonists that may soon improve the ability to manage hyponatremia with chronic hyponatremia. Hundreds of new references cover the most up-to-date advances in fluid therapy, including renal failure and shock syndromes.

Bioprocessing of Viral Vaccines Jan 27 2022 This book focuses on cell culture-produced viral vaccines to meet the needs of the rapidly expanding research and development in academia and industry in the field. This book introduces the basic principles of vaccination and the manufacturing of viral vaccines. *Bioprocessing of Viral Vaccines*, will provide an overview of the advanced strategies needed to respond to the challenges of new and established viral infection diseases. The first chapters cover the basics of virology and immunology as essential concepts to understand the function and design of viral vaccines. The core of the content is dedicated to process development including upstream processing and cell culture of viral vaccines, downstream processing, and extensive analytical technologies specific to viral vaccines. Advanced process analytical technology (PAT) and Quality by Design (QbD) concepts are also introduced in the context of vaccine manufacturing. The case studies included cover inactivated, attenuated vaccines exemplified by influenza vaccines, sub-unit vaccines exemplified by Virus Like Particles (VLPs: HPV vaccines) and sub-unit vaccines (Flublock), vectored vaccines: adenoviruses and Vesicular stomatitis Virus (VSV) vectored vaccines, genomic vaccines (DNA and mRNA) vaccines as developed for COVID-19 response in particular and a review of COVID-19 vaccines approved or in advanced clinical trials. This book is aimed at graduate engineers and professionals in the fields of vaccinology, bioprocessing, and biomanufacturing of viral vaccines.

Small Animal Internal Medicine - E-Book Nov 12 2020 Learn to effectively recognize, diagnose, and treat common internal medical conditions with this invaluable reference. *Small Animal Internal Medicine, Fourth Edition*, emphasizes practical diagnostic approaches and focuses on the clinically relevant aspects of patient medical management. Extensive color illustrations, boxes, and algorithms plus new photographs, schematic representations, and updated tables, set this book apart. With a highly functional design and clear, expert voice, this text delivers the most relevant information on the internal medical challenges you're most likely to face. Utilizes a problem-oriented approach beginning with a discussion of clinical signs and diagnostic recommendations and techniques moving on to therapeutic considerations and management. Each contributor is a recognized expert in his or her respective specialty. Limited number of authors provides consistency. Clear, step-by-step procedural guidelines thoroughly describe each procedure. Cross-referencing throughout the book reduces redundancy and makes information easy to locate. Suggested readings at the end of each chapter alert you to the latest research findings. Comprehensive drug tables provide recommended dosages and indications. Purposefully written to enhance critical thinking and decision-making.

based on clinical findings. Hundreds of summary boxes and tables allow quick access to clinical signs, etiology, differential diagnoses, drugs, and treatment. Full-color format brings you accurate visual depictions of specific disorders, diseases, and procedures. Two new section editors bring a new perspective. Discussion of Immune-Mediated Disorders has been significantly expanded and moved into its own section. Hundreds of new, full-color photographs and quick reference tables throughout. Completely updated drug and treatment guidelines tables

3D Printing in Medicine May 07 2020 This book describes the fundamentals of three-dimensional (3D) printing, addresses the practical aspects of establishing a 3D printing service in a medical facility, and explains the enormous potential value of rendering images as 3D printed models of providing tactile feedback and tangible information on both anatomic and pathologic states. Individual chapters also focus on selected areas of applications for 3D printing, including musculoskeletal, craniomaxillofacial, cardiovascular, and neurosurgery applications. Challenges and opportunities related to training, materials and equipment, and guidelines are addressed, and the overall costs of a 3D printing lab and the balancing of these costs against clinical benefits are discussed. Radiologists, surgeons, and other physicians will find this book to be a rich source of information on the practicalities and expanding medical applications of 3D printing.

Handbook of Veterinary Pain Management - E-Book 2020 You can trust this user-friendly guide to help you meet the increasing need for effective pain management in the animals you treat. It provides instant access to clinically relevant information on pain assessment, pharmaceutical and pharmaceutical treatment options, guidelines for managing acute and chronic pain, and unique aspects of pain management in dogs, cats, horses, cattle, birds, reptiles, ferrets, and rabbits. The user-friendly format helps you quickly and easily find essential pain management information. Helpful summary boxes and tables provide at-a-glance access to pharmacologic protocols and clinical applications, including dosages, indications, contraindications, and side effects. Complementary and alternative treatment strategies are included throughout to assist you in using the latest non-pharmacologic pain interventions. Case studies clearly illustrate the practical applications of key concepts in the clinical setting and help you sharpen your pain assessment and management skills. New contributors — many of the most respected experts in the field — share their insights and experiences to bring you the most current thinking in this ever-changing discipline. Completely revised and updated content throughout ensures you are using the best and most current information available on analgesics and pain management techniques. An expanded chapter on Pain Management in Horses and Cattle explores the latest advances in treating this group of animals. Eight new chapters offer cutting-edge coverage of hot topics in the field, including: Pain Management in the Cat Pain Management in the Dog Pet Bird Clinical Approaches to Analgesia in Reptiles Clinical Approaches to Analgesia in Ferrets and Rabbits Physical Therapy and Rehabilitation in Dogs Rehabilitation Methods and Modalities in the Dog the Cat Quality of Life Issues Hospice and Palliative Care

Manual of Veterinary Transfusion Medicine and Blood Banking Sep 10 2019 Using a practical, step-by-step approach, the Manual of Veterinary Transfusion Medicine and Blood Banking provides veterinarians and practitioners with evidence-based guidelines to refer to at the clinical practice level. Provides evidence-based information on transfusion medicine and blood banking practices Presents sections on donor screening, recipient screening, donor selection, blood collection and storage, and how to meet blood product demands Includes useful protocols for transfusions and blood banking relevant to clinical practice Incorporates the balanced perspectives of veterinarians and veterinary technicians Contains information pertaining to large, small, and exotic animals

Chronic Pain in Dogs Jun 07 2020 This book aims to introduce veterinary surgeons to a new concept of pain for a better understanding of what pain is and how it occurs. By describing pain pathophysiology and the

their regulation, as well as the sophisticated therapeutic systems that are currently being developed. This book shows its readers how to interpret pain, and how to identify it as a pathology in itself, and not just as such.

**The Welfare of Animals in Animal-Assisted Interventions** April 29, 2022 This is the first book focusing on the animal's perspective and best practices to ensure the welfare of both therapy animals and human counterparts in animal-assisted interventions. Written by leading scientists, it summarizes the scientific evidence available concerning the impacts on animals in these settings, including companion species, horses, marine mammals and other animals used in therapy. There has been a dramatic increase in the range of animal-assisted interventions used in medical and allied health environments in recent years, and the field is now entering an era with a greater interest in understanding the underlying mechanisms of the human-animal bond as well as the therapeutic benefits of these interactions. Animal-assisted interventions, as with other uses of animals by humans, impose a unique set of stresses on the animals, which the community has only recently begun to acknowledge. For the field to continue to flourish, more evidence is needed to shed light on the implications for the animals and what guidelines need to be put into practice to ensure welfare. With the ultimate goal of improving the impact that we have on the animals under our care, the book provides a roadmap for researchers and clinicians as they attempt to safely and humanely incorporate various species of animals into therapeutic settings. The authors also offer instructions and suggestions for areas that need to be studied more robustly over the next decade to continue to ensure the safe and proper use of animals in therapy sessions. This is an informative, thought-provoking and instructive resource for practitioners and researchers in the field of medicine and clinical psychology using animal-assisted interventions, as well as for veterinarians and welfare scientists.