

Animal Science Biology And Technology Texas Science 3rd Edition

There is increasing interest in the biology of domestic animals ranging from genomics, transcriptomics, metabolomics, nutritional physiology, and systems biology. This book touches on all of these, with a particular focus on topics such as domestic animals as comparative models to humans, molecular regulation of growth, metabolic efficiency, reproduction, and the impact of stress on growth and development. The book concludes with a discussion on the current and future directions for researchers.

By 2050 the world's population is projected to grow by one-third, reaching between 9 and 10 billion. With globalization and expected growth in global affluence, a substantial increase in per capita meat, dairy, and fish consumption is also anticipated. The demand for calories from animal products will nearly double, highlighting the critical importance of the world's animal agriculture system. Meeting the nutritional needs of this population and its demand for animal products will require a significant investment of resources as well as policy changes that are supportive of agricultural production. Ensuring sustainable agricultural growth will be

essential to addressing this global challenge to food security. Critical Role of Animal Science Research in Food Security and Sustainability identifies areas of research and development, technology, and resource needs for research in the field of animal agriculture, both nationally and internationally. This report assesses the global demand for products of animal origin in 2050 within the framework of ensuring global food security; evaluates how climate change and natural resource constraints may impact the ability to meet future global demand for animal products in sustainable production systems; and identifies factors that may impact the ability of the United States to meet demand for animal products, including the need for trained human capital, product safety and quality, and effective communication and adoption of new knowledge, information, and technologies. The agricultural sector worldwide faces numerous daunting challenges that will require innovations, new technologies, and new ways of approaching agriculture if the food, feed, and fiber needs of the global population are to be met. The recommendations of Critical Role of Animal Science Research in Food Security and Sustainability will inform a new roadmap for animal science research to meet the challenges of sustainable animal production in the 21st century.

Research in veterinary science is critical for the health and well-being of animals, including humans.

Food safety, emerging infectious diseases, the development of new therapies, and the possibility of bioterrorism are examples of issues addressed by veterinary science that have an impact on both human and animal health. However, there is a lack of scientists engaged in veterinary research. Too few veterinarians pursue research careers, and there is a shortage of facilities and funding for conducting research. This report identifies questions and issues that veterinary research can help to address, and discusses the scientific expertise and infrastructure needed to meet the most critical research needs. The report finds that there is an urgent need to provide adequate resources for investigators, training programs, and facilities involved in veterinary research.

Animal Cell Biotechnology: Methods and Protocols, Third Edition constitutes a comprehensive manual of state-of-the-art and new techniques for setting up mammalian cell lines for production of biopharmaceuticals, and for optimizing critical parameters for cell culture from lab to final production. The volume is divided into five parts that reflect the processes required for different stages of production. In Part I, basic techniques for establishment of production cell lines are addressed, especially high-throughput synchronization, insect cell lines, transient gene and protein expression, DNA Profiling and Characterisation. Part II

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addresses tools for process and medium optimization as well as microcarrier technology while Part III covers monitoring of cell growth, viability and apoptosis, metabolic flux estimation, quenching methods as well as NMR-based techniques. Part IV details cultivation techniques, and Part V describes special applications, including vaccine production, baculovirus protein expression, chromatographic techniques for downstream as well as membrane techniques for virus separation. Written in the successful *Methods in Molecular Biology* series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible protocols, and notes on troubleshooting and avoiding known pitfalls. *Animal Cell Biotechnology: Methods and Protocols, Third Edition* provides a compendium of techniques for scientists in industrial and research laboratories that use mammalian cells for biotechnology purposes.

Biotechnology for Beginners, Second Edition, presents the latest information and developments from the field of biotechnology—the applied science of using living organisms and their by-products for commercial development—which has grown and evolved to such an extent over the past few years that increasing numbers of professionals work in areas that are directly impacted by the science. For the first time, this book offers an exciting and colorful

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overview of biotechnology for professionals and students in a wide array of the life sciences, including genetics, immunology, biochemistry, agronomy, and animal science. This book also appeals to the lay reader without a scientific background who is interested in an entertaining and informative introduction to the key aspects of biotechnology. Authors Renneberg and Demain discuss the opportunities and risks of individual technologies and provide historical data in easy-to-reference boxes, highlighting key topics. The book covers all major aspects of the field, from food biotechnology to enzymes, genetic engineering, viruses, antibodies, and vaccines, to environmental biotechnology, transgenic animals, analytical biotechnology, and the human genome. This stimulating book is the most user-friendly source for a comprehensive overview of this complex field. Provides accessible content to the lay reader who does not have an extensive scientific background Includes all facets of biotechnology applications Covers articles from the most respected scientists, including Alan Guttmacher, Carl Djerassi, Frances S. Ligler, Jared Diamond, Susan Greenfield, and more Contains a summary, annotated references, links to useful web sites, and appealing review questions at the end of each chapter Presents more than 600 color figures and over 100 illustrations Written in an enthusiastic and engaging style unlike other existing

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theoretical and dry-style biotechnology books

Laboratory Animal Medicine is a compilation of papers that deals with the diseases and biology of major species of animals used in medical research. The book discusses animal medicine, experimental methods and techniques, design and management of animal facilities, and legislation on laboratory animals. Several papers discuss the biology and diseases of mice, hamsters, guinea pigs, and rabbits. Another paper addresses the dog and cat as laboratory animals, including sourcing of these animals, housing, feeding, and their nutritional needs, as well as breeding and colony management. The book also describes ungulates as laboratory animals, including topics on sourcing, husbandry, preventive medical treatments, and housing facilities. One paper addresses primates as test animals, covering the biology and diseases of old world primates, Cebidae, and ferrets. Some papers pertain to the treatment, diseases, and needed facilities for birds, amphibians, and fish. Other papers then deal with techniques of experimentation, anesthesia, euthanasia, and some factors (spontaneous diseases) that complicate animal research. The text can prove helpful for scientists, clinical assistants, and researchers whose work involves laboratory animals.

Many of the difficulties that meat and animal scientists face when attempting to address specific

problems—such as stress susceptibility and poor meat quality in swine—stem from a lack of understanding of the underlying biological mechanisms that drive muscle growth, metabolism, and its conversion to meat. This book provides current knowledge about skeletal muscle and meat, and serves as a platform for further investigation of specific technical issues. Applied Muscle Biology and Meat Science outlines the tremendous strides made in the field of muscle biology in recent years, particularly pertaining to the understanding of the mechanisms that control skeletal muscle growth and development. With a distinguished international team of contributors, this text discusses the impact these factors have on meat production and quality with worldwide applicability. This state-of-the-science reference covers a wide range of topics in muscle biology and meat science, including genetic selection, muscle structure and development, muscle protein turnover and meat tenderization, meat quality, collagen, color, lipid, and meat safety. With approximately 85 illustrations and tables, the text focuses on biological changes and the appropriate management techniques for meat animals. Given recent developments in energy costs and distribution and changes in the commodities markets driven by the demand for biofuels, the challenges for animal production agriculture will only increase. This valuable text furthers understanding

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of the underlying biological mechanisms that are related to animal and meat production--an understanding that will play an integral role in solving today's industry challenges.

This is a student-friendly compendium of the essentials of animal biology, including the Animal Kingdom, comparative physiology, reproductive physiology and developmental biology.

Biomedical advances have made it possible to identify and manipulate features of living organisms in useful ways--leading to improvements in public health, agriculture, and other areas. The globalization of scientific and technical expertise also means that many scientists and other individuals around the world are generating breakthroughs in the life sciences and related technologies. The risks posed by bioterrorism and the proliferation of biological weapons capabilities have increased concern about how the rapid advances in genetic engineering and biotechnology could enable the production of biological weapons with unique and unpredictable characteristics. Globalization, Biosecurity, and the Future of Life Sciences examines current trends and future objectives of research in public health, life sciences, and biomedical science that contain applications relevant to developments in biological weapons 5 to 10 years into the future and ways to anticipate, identify, and mitigate these dangers.

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Increased agricultural productivity is a major stepping stone on the path out of poverty in sub-Saharan Africa and South Asia, but farmers there face tremendous challenges improving production. Poor soil, inefficient water use, and a lack of access to plant breeding resources, nutritious animal feed, high quality seed, and fuel and electricity-combined with some of the most extreme environmental conditions on Earth-have made yields in crop and animal production far lower in these regions than world averages. *Emerging Technologies to Benefit Farmers in Sub-Saharan Africa and South Asia* identifies sixty emerging technologies with the potential to significantly improve agricultural productivity in sub-Saharan Africa and South Asia. Eighteen technologies are recommended for immediate development or further exploration. Scientists from all backgrounds have an opportunity to become involved in bringing these and other technologies to fruition. The opportunities suggested in this book offer new approaches that can synergize with each other and with many other activities to transform agriculture in sub-Saharan Africa and South Asia.

The perfect study companion, *Animal Biology and Care, 3rd Edition* is specifically designed for students on animal care, animal nursing assistant and veterinary care assistant courses. This edition is fully updated with new course content, a refreshed design

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and colour illustrations throughout. Basic biological theory is introduced with diagrams for visual learners while photographs demonstrate the common practical procedures carried out by animal care assistants. Key features include: New content on exotic species, recognising the increasing number of these animals kept as pets. Extensive coverage of the Animal Welfare Act 2006 and recent advances in animal welfare. Written in line with course curricula, chapter summaries help you to remember key points and learning objectives. A companion website has interactive MCQs to help you test your knowledge. Divided into three main sections covering animal science and genetics, health and husbandry and nursing procedures, this book will help lay the foundations for a successful career in animal care and management!

Covering all aspects of basic microbial, plant, animal, and human biology, this text describes the linkage of biological principles to various biotechnologies. It also discusses the basic concepts of genetics and molecular biology along with many other related ideas.

Genetic-based animal biotechnology has produced new food and pharmaceutical products and promises many more advances to benefit humankind. These exciting prospects are accompanied by considerable unease, however, about matters such as safety and ethics. This book identifies science-based and policy-

related concerns about animal biotechnologyâ€"key issues that must be resolved before the new breakthroughs can reach their potential. The book includes a short history of the field and provides understandable definitions of terms like cloning. Looking at technologies on the near horizon, the authors discuss what we know and what we fear about their effectsâ€"the inadvertent release of dangerous microorganisms, the safety of products derived from biotechnology, the impact of genetically engineered animals on their environment. In addition to these concerns, the book explores animal welfare concerns, and our societal and institutional capacity to manage and regulate the technology and its products. This accessible volume will be important to everyone interested in the implications of the use of animal biotechnology.

Genome-editing methods are becoming routine tools for molecular and cell biologists. Such tools include ZFNs, CRISPR, megaTALs and TALENs. These tools are revolutionizing the creation of precisely manipulated genomes to modify the characteristics of organisms or cells. Additionally, gene drives have altered the way we understand inheritance laws. They give us the ability to have total control of the inheritance of traits of choice and importance. This succinct volume summarizes the history, principles and applications – as well as the advantages and disadvantages – of each of these tools and various

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kinds of gene drives. The book is part of a program to produce books helpful to students and faculties of science at colleges and universities. This volume in the Pocket Guides to Biomedical Sciences series will help demystify these technologies. The book fills the gap between established conventional methods and the novel and exciting newly introduced tools of genome editing and gene drives. It will help young scientists understand the emerging genome-editing tools and gene drives, thereby promoting related research and adoption. Key Features Extensively reviews the current genome-editing tools and gene drives Clarifies the targeting mechanisms and specificity of genome-editing tools Details many different types of natural and synthetic gene drives Highlights concerns with gene drives and genome-editing tools Related Titles Brown, T. A. Genomes 4 (ISBN 978-0-8153-4508-4) Samuelsson, T. The Human Genome in Health and Disease: A Story in Four Letters (ISBN 978-0-8153-4591-6) Soh, J., et al. Genome Annotation (ISBN 978-1-4398-4117-4) Key features: Serves as the first single-source reference with in-depth coverage of techniques appropriate for the laboratory and field study of sharks, skates, and rays Contains chapters on a broad range of methods such as Imaging Technologies, Satellite Tracking, Stationary Underwater Video, and Population Genetic Approaches and Genomics among others Presents

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technologies that can be used to study other aquatic fish and marine mammals and reptiles Includes chapter authors who were pioneers in developing some of the technologies discussed in the book Concludes with a unique section on Citizen Science and its Application to Studies of Shark Biology Over the last decade, the study of shark biology has benefited from the development, refinement, and rapid expansion of novel techniques and advances in technology. These have given new insight into the fields of shark genetics, feeding, foraging, bioenergetics, imaging, age and growth, movement, migration, habitat preference, and habitat use. This pioneering book, written by experts in shark biology, examines technologies such as autonomous vehicle tracking, underwater video approaches, molecular genetics techniques, and accelerometry, among many others. Each detailed chapter offers new insights and promises for future studies of elasmobranch biology, provides an overview of appropriate uses of each technique, and can be readily extended to other aquatic fish and marine mammals and reptiles.

Authored by an integrated committee of plant and animal scientists, this review of newer molecular genetic techniques and traditional research methods is presented as a compilation of high-reward opportunities for agricultural research. Directed to the Agricultural Research Service and the

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agricultural research community at large, the volume discusses biosciences research in genetic engineering, animal science, plant science, and plant diseases and insect pests. An optimal climate for productive research is discussed.

Reproductive Technologies in Animals provides the most updated and comprehensive knowledge on the various aspects and applications of reproductive technologies in production animals as well as companion, wild, exotic, and laboratory animals and birds. The text synthesizes historical information and recent discoveries, while dealing with economical and geographical issues related to the implementation of the same technologies. It also presents the effects of reproductive technology implementation on animal welfare and the possible threat of pathogen transmission. Reproductive Technologies in Animals is an important resource for academics, researchers, professionals in public and private animal business, and students at the undergraduate and graduate levels, as it gives a full and detailed first-hand analysis of all species subjected to the use of reproductive technologies. Provides research from a team of scientists and researchers whose expertise spans all aspects of animal reproductive technologies Addresses the use of reproductive technologies in a wide range of animal species Offers a complete description and historical background for each species described

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Discusses successes and failure as well as future challenges in reproductive technologies

Introduction to Animal Science: Global, Biological, Social, and Industry Perspectives, Fifth Edition, features the most comprehensive, up-to-date coverage of the traditional disciplines that are so essential to a solid foundation in Animal Science: nutrition, digestion, feeds, genetics, reproduction, disease, and animal behavior. The text's comprehensive, non-traditional approach introduces the discipline as an ever-changing, integral part of every aspect of human existence. Author W.

Stephen Damron not only presents thorough coverage of the major species and their respective concerns, he challenges you to consider the many pressing interests relevant to Animal Science as it influences and is influenced by society today.

This book focuses on the animal husbandry and nutrition based on significant evaluations by the authors of the chapters. Many chapters contain general overviews on animal husbandry and nutrition from different countries. Also, the sections created shed light on futuristic overlook with improvements for animal husbandry and feeding sector. Details about rearing and feeding different animal races are also covered herein. It is hoped that this book will serve as a source of knowledge and information on animal husbandry and nutrition sector.

Executive summary and recommendations. Scientific

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aspects. Funding and institutions. Training. Technology transfer.

The Science of Animal Growth and Meat Technology, Second Edition, combines fundamental science- based and applied, practical concepts relating to the prenatal and postnatal growth of cattle, sheep and pigs. It provides the necessary components to understand the production and growth of livestock for safe and quality meat products and presents an understanding of the principles of meat science and technology that is needed to understand the meat industry. Information on the slaughter process of animals, muscle structure and meat tenderness, meat quality, meat safety, and microbiology makes this a valuable self-study reference for students and professionals entering the field. Describes principles in muscle metabolism, meat quality and meat safety using case studies Discusses the microbial safety of meat products, primary pathogens of concern, and pathogen detection Offers solutions on how to control bacterial growth to improve the safety and quality of meat Presents a new chapter on packaging for meat and meat products that focuses on flexible film technology, packaging materials and equipment technology Includes new information on inspection systems prior to slaughter, during slaughter, and the inspection of meat processing systems

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As species extinction, environmental protection, animal rights, and workplace safety issues come to the fore, zoos and aquariums need keepers who have the technical expertise and scientific knowledge to keep animals healthy, educate the public, and create regional, national, and global conservation and management communities. This textbook offers a comprehensive and practical overview of the profession geared toward new animal keepers and anyone who needs a foundational account of the topics most important to the day-to-day care of zoo and aquarium animals. The three editors, all experienced in zoo animal care and management, have put together a cohesive and broad-ranging book that tackles each of its subjects carefully and thoroughly. The contributions cover professional zookeeping, evolution of zoos, workplace safety, animal management, taxon-specific animal husbandry, animal behavior, veterinary care, public education and outreach, and conservation science. Using the newest techniques and research gathered from around the world, Zookeeping is a progressive textbook that seeks to promote consistency and the highest standards within global zoo and aquarium operations. Animal Science Biology and Technology, 3rd edition is a book designed for students studying animal science that will take readers from the basics of physiology through production and on to evaluation,

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while delivering a contemporary industry overview. You will find the opportunities for experiential learning found throughout this book will be especially helpful in planning supervised agricultural experience projects and FFA career development events. In addition, the career focus sections present opportunities in a story format that will pique students' interest and the accompanying laboratory manual and student activities will provide hands on engagement. . Animal Science Biology and Technology, 3rd edition was written by nationally renowned educators who also own and operate a beef cattle farm. MeeCee Baker and Robert Mikesell bring academia into the pasture to combine the empirical and the practical in a text suitable for students of all ages and stages. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

When considering the physiological systems of the body, the degree of species variation within the reproductive system compared to other systems is remarkable. Furthermore, it is essential that researchers, educators, and students alike remain aware of the fundamental comparative differences in the reproductive biology of domestic species. Written by renowned scientists in their respective fields, Comparative Reproductive Biology is a comprehensive reference on the reproductive

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systems of domestic species. The book offers both broad and specific knowledge in areas that have advanced the field in recent years, including advances in cell and molecular biology applied to reproduction, transgenic animal production, gender selection, artificial insemination, embryo transfer, cryobiology, animal cloning and many others. This seminal text includes topics in animal reproduction that are usually only found as part of other books in animal science such as anatomy, histology, physiology, radiology, ultrasonography, and others. Comprehensive reference of the reproductive systems of domestic species Written by a team of top researchers Richly illustrated throughout, including 12 pages of color images

This text provides a comprehensive introduction to the fundamental principles of animal science. New sections on the application of biology and technology to animal science in many areas, such as reproductive physiology, genetics, and animal health, have been added. A new, well illustrated chapter on breeds of livestock and poultry has been added, and tabular and illustrative materials have been updated throughout.

Omics Technologies and Bio-Engineering: Towards Improving Quality of Life, Volume 1 is a unique reference that brings together multiple perspectives on omics research, providing in-depth analysis and insights from an international team of authors. The book delivers pivotal information that will inform and improve medical and biological research by helping readers gain more direct access to analytic data, an increased understanding on data evaluation, and a

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comprehensive picture on how to use omics data in molecular biology, biotechnology and human health care. Covers various aspects of biotechnology and bio-engineering using omics technologies Focuses on the latest developments in the field, including biofuel technologies Provides key insights into omics approaches in personalized and precision medicine Provides a complete picture on how one can utilize omics data in molecular biology, biotechnology and human health care

ClassMaster CD-ROM to Accompany Animal Science Biology & Technology - SH. Animal Science Biology and Technology Cengage Learning

Systems Biology is an interdisciplinary approach to the study of life made possible through the explosion of molecular data made available through the genome revolution and the simultaneous development of computational technologies that allow us to interpret these large data sets. Systems Biology has changed the way biological science views and studies life and has been implemented in research efforts across the biological sciences. Systems Biology and Livestock Science will be the first book to review the latest advances using this research methodology in efforts to improve the efficiency, health, and quality of livestock production. Systems Biology and Livestock Science opens with useful introductory chapters explaining key systems biology principles. The chapters then progress to look at specific advances in fields across livestock science. Coverage includes, but is not limited to, chapters on systems biology approaches to animal nutrition, reproduction, health and disease, and animal physiology. Written by leading researchers in the field, Systems Biology and Livestock Science, will be an invaluable resource to researchers, professionals, and advance students working in this rapidly developing discipline.

Scientific experiments using animals have contributed

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significantly to the improvement of human health. Animal experiments were crucial to the conquest of polio, for example, and they will undoubtedly be one of the keystones in AIDS research. However, some persons believe that the cost to the animals is often high. Authored by a committee of experts from various fields, this book discusses the benefits that have resulted from animal research, the scope of animal research today, the concerns of advocates of animal welfare, and the prospects for finding alternatives to animal use. The authors conclude with specific recommendations for more consistent government action.

PRINT/ONLINE PRICING OPTIONS AVAILABLE UPON REQUEST AT e-reference@taylorandfrancis.com Containing case studies that complement material presented in the text, the vast range of this definitive Encyclopedia encompasses animal physiology, animal growth and development, animal behavior, animal reproduction and breeding, alternative approaches to animal maintenance, meat science and muscle biology, farmed animal welfare and bioethics, and food safety. With contributions from top researchers in their discipline, the book addresses new research and advancements in this burgeoning field and provides quick and reader-friendly descriptions of technologies critical to professionals in animal and food science, food production and processing, livestock management, and nutrition.

Animal Agriculture: Sustainability, Challenges and Innovations discusses the land-based production of high-quality protein by livestock and poultry and how it plays an important role in improving human nutrition, growth and health. With exponential growth of the global population and marked rises in meat consumption per capita, demands for animal-source protein are expected to increase 72% between 2013 and 2050. This raises concerns about the sustainability and environmental impacts of animal agriculture. An attractive

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solution to meeting increasing needs for animal products and mitigating undesirable effects of agricultural practices is to enhance the efficiency of animal growth, reproduction, and lactation. Currently, there is no resource that offers specific knowledge of both animal science and technology, including biotechnology for the sustainability of animal agriculture for the expanding global demand of food in the face of diminishing resources. This book fills that gap, giving readers all the necessary information on important issues facing modern animal agriculture, namely its sustainability, challenges and innovative solutions. Integrates new knowledge in animal breeding, biotechnology, nutrition, reproduction and management Addresses the urgent issue of sustainability in modern animal agriculture Provides practical solutions on how to solve the current and future problems that face animal agriculture worldwide

Depicts the main characteristics of religion in the United States, including Native American beliefs, the introduction and spread of Christianity, and the growth of other new and more recently imported faiths.

Argues for responsible action in the treatment of animals, challenging popular conceptions about animal feeling and awareness and profiling a safari convention, factory farm, and the works of top writers.

In this book, we provide an easy introduction to Bayesian inference using MCMC techniques, making most topics intuitively reasonable and deriving to appendixes the more complicated matters. The biologist or the agricultural researcher does not normally have a background in Bayesian statistics, having difficulties in following the technical books introducing Bayesian techniques. The difficulties arise from the way of making inferences, which is completely different in the Bayesian school, and from the difficulties in understanding complicated matters such as the MCMC

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numerical methods. We compare both schools, classic and Bayesian, underlying the advantages of Bayesian solutions, and proposing inferences based in relevant differences, guaranteed values, probabilities of similitude or the use of ratios. We also give a scope of complex problems that can be solved using Bayesian statistics, and we end the book explaining the difficulties associated to model choice and the use of small samples. The book has a practical orientation and uses simple models to introduce the reader in this increasingly popular school of inference.

This book provides an up-to-date overview of the various reproductive systems of a variety of aquatic animals, from invertebrates to fishes. While all terrestrial animals use internal fertilization, aquatic animals have diverse reproductive systems. Some are internal fertilizers with or without mating, but many perform external fertilization. Because of this diversity, the reproductive systems of aquatic animals represent excellent models for the study of adaptive evolution and the species specificity of fertilization. In addition, many aquatic animals, including fish, crustaceans, and mollusks, are important as fishery and aquaculture resources. In this book, up-and-coming researchers examine reproductive systems in representative aquatic animals, covering both the basic knowledge and late-breaking results. *Reproduction in Aquatic Animals: From Basic Biology to Aquaculture Technology* will be of interest to graduate and postgraduate students in biology and agricultural sciences, as well as to researchers and technicians in the fields of reproductive biology and fishery science and to non-academics.

Peste de Petits Ruminants (PPR) is a highly contagious viral disease of domestic and wild small ruminants that can significantly affect economies. The authors are experts in the field and provide an up-to-date and comprehensive review

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covering all aspects of the disease. The book is divided into seven chapters highlighting genome organization, virus replication and the determinants of virulence, pathophysiology and clinical disease, immunology and immunopathogenesis, epidemiology, diagnostic assays and vaccines, and the challenges concerning global eradication. It is an invaluable reference work, presenting the latest information for virologists, microbiologists, immunologists, veterinarians, and scientists working in PPR research.

This 30-chapter volume informs students and professionals about the behavioral biology of animals commonly housed in laboratory and other captive settings. Each species evolved under specific environmental conditions, resulting in unique behavioral patterns, many of which are maintained in captivity even after generations of breeding. Understanding natural behavior is therefore a critical part of modern animal care practices. The descriptions, data, guidance, resources, and recommendations in this book will help the reader understand their animals better, refine the care and treatment that they receive, and improve the well-being, welfare, and wellness of their animals. The book is divided into three sections, all focusing on aspects of the behavioral biology of animals found in laboratories and related research settings. After five introductory chapters, 25 chapters are dedicated to specific taxonomic groups (including mice, zebrafish, zebra finches, reptiles, macaques) while a concluding section of ethograms provides a centralized resource for those interested in understanding, and potentially quantifying, animal behavior. The Behavioral Biology of Laboratory Animals will provide anyone working in maintenance, care, and/or research programs that involve laboratory animals with information about the way the animals live in the wild, and the way that they should live in captive research settings. Many of the guidelines and recommendations will also be valuable to

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those managing and working with animals in other environments, including zoological parks, aquaria, and sanctuaries.

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