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Lewin's GENES XII Jocelyn E. Krebs 2017-03-02 Now in its twelfth edition, Lewin's GENES continues to lead with new information and cutting-edge developments, covering gene structure, sequencing, organization, and expression. Leading scientists provide revisions and updates in their individual field of study offering readers current data and information on the rapidly changing subjects in molecular biology.

Campbell Biology Australian and New Zealand Edition Jane B. Reece 2015-05-20 Over nine successful editions, CAMPBELL BIOLOGY has been recognised as the world's leading introductory biology textbook. The Australian edition of CAMPBELL BIOLOGY continues to engage students with its dynamic coverage of the essential elements of this critical discipline. It is the only biology text and media product that helps students to make connections across different core topics in biology, between text and visuals, between global and Australian/New Zealand biology, and from scientific study to the real world. The Tenth Edition of Australian CAMPBELL BIOLOGY helps launch students to success in biology through its clear and engaging narrative, superior pedagogy, and innovative use of art and photos to promote student learning. It continues to engage students with its dynamic coverage of the essential elements of this critical discipline. This Tenth Edition, with an increased focus on evolution, ensures students receive the most up-to-date, accurate and relevant information.

Genetics Primer for Exercise Science and Health Stephen M. Roth 2007

Human Population Genetics and Genomics Alan R. Templeton 2018-11-08 Human Population Genetics and Genomics provides researchers/students with knowledge on population genetics and relevant statistical approaches to help them become more effective users of modern genetic, genomic and statistical tools. In-depth chapters offer thorough discussions of systems of mating, genetic drift, gene flow and subdivided populations, human population history, genotype and phenotype, detecting selection, units and targets of natural selection, adaptation to temporally and spatially variable environments, selection in age-structured populations, and genomics and society. As human genetics and genomics research often employs tools and approaches derived from population genetics, this book helps users understand the basic principles of these tools. In addition, studies often employ statistical approaches and analysis, so an understanding of basic statistical theory is also needed. Comprehensively explains the use of population genetics and genomics in medical applications and research Discusses the relevance of population genetics and genomics to major social issues, including race and the dangers of modern eugenics proposals Provides an overview of how population genetics and genomics helps us understand where we came from as a species and how we evolved into who we are now

Sex-linked Inheritance in Drosophila Thomas Hunt Morgan 2021-04-25 "Sex-linked Inheritance in Drosophila" by Thomas Hunt Morgan, Calvin B. Bridges. Published by Good Press. Good Press publishes a wide range of titles that encompasses every genre. From well-known classics & literary fiction and non-fiction to forgotten—or yet undiscovered gems—of world literature, we issue the books that need to be read. Each Good Press edition has been meticulously edited and formatted to boost readability for all e-readers and devices. Our goal is to produce eBooks that are user-friendly and accessible to everyone in a high-quality digital format.

Moderns Abc of Biology B. B. Arora 2016

Epigenetics of Exercise and Sports Stuart Raleigh 2021-07-13 Epigenetics of Exercise and Sports: Concepts, Methods, and Current Research explains fundamental epigenetic processes and how these are altered by exercise and sports. After a brief review of fundamental epigenetic biology, this all-new volume in the Translational Epigenetics series offers step-by-step instruction in how epigenetic factors are investigated for their influence over exercise related traits of human physiology, disease, and injury. The current state of knowledge in the field and recent findings are discussed in-depth, illuminating how exercise and sports performance may epigenetically modify our physiology, disease and injury risks, and how this knowledge can be applied in personalized exercise approaches, diagnostics, and treatment. This book also explores the shortcomings of explaining exercise related phenomena using only genomics and traditional biochemical techniques, setting the scene for a paradigm shift in exercise biology. In addition, over a dozen international specialists contribute chapters on exercise and sports epigenetics, and their influence over metabolism, obesity, aging, immunity, and neurological disease, as well as the epigenetic impacts of concussions and sports doping. A concluding chapter discusses ongoing themes in the field and outlooks for future research. Thoroughly examines fundamental concepts in exercise and sports epigenetics, methods for new research, and known impacts for human physiology, disease, and clinical outcomes Discusses exercise and sports epigenetics in relation to metabolism, obesity, aging, immunity, and neurological disease, concussion, and sports doping, among other topics Includes preliminary information on exercise epigenetics and covid-19 infection Features chapter contributions from international experts in the field

Advanced Methods in Molecular Biology and Biotechnology Khalid Z. Masoodi 2020-11-10 Advanced Methods in Molecular Biology and Biotechnology: A Practical Lab Manual is a concise reference on common protocols and techniques for advanced molecular biology and biotechnology experimentation. Each chapter focuses on a different method, providing an overview before delving deeper into the procedure in a step-by-step approach. Techniques covered include genomic DNA extraction using cetyl trimethylammonium bromide (CTAB) and chloroform extraction, chromatographic techniques, ELISA, hybridization, gel electrophoresis, dot blot analysis and methods for studying polymerase chain reactions. Laboratory protocols and standard operating procedures for key equipment are also discussed, providing an instructive overview for lab work. This practical guide focuses on the latest advances and innovations in methods for molecular biology and biotechnology investigation, helping researchers and practitioners enhance and advance their own methodologies and take their work to the next level. Explores a wide range of advanced methods that can be applied by researchers in molecular biology and biotechnology Features clear, step-by-step instruction for applying the techniques covered Offers an introduction to laboratory protocols and recommendations for best practice when conducting experimental work, including standard operating procedures for key equipment

Laboratory Manual for Human Biology David Morton 2011-01-01 This four-color lab manual contains 21 lab exercises, most of which can be completed within two hours and require minimal input from the instructor. To provide flexibility, instructors can vary the length of most exercises, many of which are divided into several parts, by deleting portions of the procedure without sacrificing the overall purpose of the experiment. Taking a consistent approach to each exercise, the second edition provides an even clearer presentation, updated coverage, and increased visual support to enable students to apply concepts from the Human Biology course. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Exercise Genomics Linda S. Pescatello 2011-03-23 Exercise Genomics encompasses the translation of exercise genomics into preventive medicine by presenting a broad overview of the rapidly expanding research examining the role of genetics and genomics within the areas of exercise performance and health-related physical activity. Leading researchers from a number of the key exercise genomics research groups around the world have been brought together to provide updates and analysis on the key discoveries of the past decade, as well as lend insights and opinion about the future of exercise genomics, especially within the contexts of translational and personalized medicine. Clinicians, researchers and health/fitness professionals will gain up-to-date background on the key findings and critical unanswered questions across several areas of exercise genomics, including performance, body composition, metabolism, and cardiovascular disease risk factors. Importantly, basic information on genomics, research methods, and statistics are presented within the

context of exercise science to provide students and professionals with the foundation from which to fully engage with the more detailed chapters covering specific traits. Exercise Genomics will be of great value to health/fitness professionals and graduate students in kinesiology, public health and sports medicine desiring to learn more about the translation of exercise genomics into preventive medicine.

Investing Biology Pearson Education 2002-11

Understanding Genetics Genetic Alliance 2009 The purpose of this manual is to provide an educational genetics resource for individuals, families, and health professionals in the New York - Mid-Atlantic region and increase awareness of specialty care in genetics. The manual begins with a basic introduction to genetics concepts, followed by a description of the different types and applications of genetic tests. It also provides information about diagnosis of genetic disease, family history, newborn screening, and genetic counseling. Resources are included to assist in patient care, patient and professional education, and identification of specialty genetics services within the New York - Mid-Atlantic region. At the end of each section, a list of references is provided for additional information. Appendices can be copied for reference and offered to patients. These take-home resources are critical to helping both providers and patients understand some of the basic concepts and applications of genetics and genomics.

Computational Genome Analysis Richard C. Deonier 2007-08-13 This book presents the foundations of key problems in computational molecular biology and bioinformatics. It focuses on computational and statistical principles applied to genomes, and introduces the mathematics and statistics that are crucial for understanding these applications. The book features a free download of the R software statistics package and the text provides great crossover material that is interesting and accessible to students in biology, mathematics, statistics and computer science. More than 100 illustrations and diagrams reinforce concepts and present key results from the primary literature. Exercises are given at the end of chapters.

Mapping and Sequencing the Human Genome National Research Council 1988-01-01 There is growing enthusiasm in the scientific community about the prospect of mapping and sequencing the human genome, a monumental project that will have far-reaching consequences for medicine, biology, technology, and other fields. But how will such an effort be organized and funded? How will we develop the new technologies that are needed? What new legal, social, and ethical questions will be raised? Mapping and Sequencing the Human Genome is a blueprint for this proposed project. The authors offer a highly readable explanation of the technical aspects of genetic mapping and sequencing, and they recommend specific interim and long-range research goals, organizational strategies, and funding levels. They also outline some of the legal and social questions that might arise and urge their early consideration by policymakers.

Conservation and the Genetics of Populations Fred W. Allendorf 2009-03-12 Conservation and the Genetics of Populations gives acomprehensive overview of the essential background, concepts, andtools needed to understand how genetic information can be used todevelop conservation plans for species threatened withextinction. Provides a thorough understanding of the genetic basis ofbiological problems in conservation. Uses a balance of data and theory, and basic and appliedresearch, with examples taken from both the animal and plantkingdoms. An associated website contains example data sets and softwareprograms to illustrate population genetic processes and methods ofdata analysis. Discussion questions and problems are included at the end ofeach chapter to aid understanding. Features Guest Boxes written by leading people in the fieldincluding James F. Crow, Nancy FitzSimmons, Robert C. Lacy, MichaelW. Nachman, Michael E. Soule, Andrea Taylor, Loren H. Rieseberg,R.C. Vrijenhoek, Lisette Waits, Robin S. Waples and AndrewYoung. Supplementary information designed to support Conservationand the Genetics of Populations including: Downloadable sample chapter Answers to questions and problems Data sets illustrating problems from the book Data analysis software programs Website links An Instructor manual CD-ROM for this title is available. Pleasecontact our Higher Education team at ahref="mailto:HigherEducation@wiley.com"HigherEducation@wiley.com/afor more information.

Genetics of Fitness and Physical Performance Claude Bouchard 1997 Genetics of Fitness and Physical Performance is the first comprehensive reference on the role of the genes in influencing individual variation in fitness and performance. This essential compendium reviews the past 25 years of accumulated evidence on the genetic basis of health- and performance-related fitness phenotypes. Focusing on the interests of sport scientists, the authors provide insight into the significance of this research on nearly every aspect of the study of human physical activity. The book presents the biological basis of heredity and explains the concepts and methods of genetic epidemiology and molecular biology that are necessary to understand this specialized field. With the rapid advances in molecular biology and the paradigms of human genetics, exercise scientists face a dynamic and vibrant new field. This book offers readers new opportunities to better understand atherosclerosis, noninsulin dependent diabetes, obesity, and hypertension by searching for single gene effects and identifying susceptibility genes. The authors review the evidence on the role of the genes for human traits as it pertains to the exercise science field. And they explore the scientific, practical, and ethical issues that confront exercise scientists as progress is made in this field. Genetics of Fitness and Physical Performance is vital reading for scholars in the field of exercise and sport science to understand how recent discoveries in genetics might shape their future research.

NTA NEET 40 Days Crash Course in Biology with 41 Online Test Series 3rd Edition Disha Experts 2018-12-17 This book contains an Access Code in the starting pages to access the 41 Online Tests. NTA NEET 40 Days Crash Course in Biology is the thoroughly revised, updated & redesigned study material developed for quick revision and practice of the complete syllabus of the NEET exams in a short span of 40 days. The book can prove to be the ideal material for class 12 students as they can utilise this book to revise their preparation immediately after the board exams. The book contains 38 chapters of class 11 & 12 and each Chapter contains: # NEET 5 Years at a Glance i.e., Past 5 years QUESTIONS of 2018- 2014 with TOPIC-WISE Analysis. # Detailed Mind-Maps covers entire JEE Syllabus for speedy revision. # IMPORTANT/ CRITICAL Points of the Chapter for last minute revision. # TIPS to PROBLEM SOLVING - to help students to solve Problems in shortest possible time. # Exercise 1 CONCEPT BUILDER- A Collection of Important Topic-wise MCQs to Build Your Concepts. # Exercise 2 CONCEPT APPLICATOR - A Collection of Quality MCQs that helps sharpens your concept application ability. # Answer Keys & Detailed Solutions of all the Exercises and Past years problems are provided at the end of the chapter. # ONLINE CHAPTER TESTS - 38 Tests of 15 Questions for each chapter to check your command over the chapter. # 3 ONLINE (Full Syllabus) MOCK TESTS - To get familiar with exam pattern and complete analysis of your Performance.

Statistics and Data with R Yosef Cohen 2008-11-20 R, an Open Source software, has become the de facto statistical computing environment. It has an excellent collection of data manipulation and graphics capabilities. It is extensible and comes with a large number of packages that allow statistical analysis at all levels - from simple to advanced - and in numerous fields including Medicine, Genetics, Biology, Environmental Sciences, Geology, Social Sciences and much more. The software is maintained and developed by academicians and professionals and as such, is continuously evolving and up to date. Statistics and Data with R presents an accessible guide to data manipulations, statistical analysis and graphics using R. Assuming no previous knowledge of statistics or R, the book includes: A comprehensive introduction to the R language. An integrated approach to importing and preparing data for analysis, exploring and analyzing the data, and presenting results. Over 300 examples, including detailed explanations of the R scripts used throughout. Over 100 moderately large data sets from disciplines ranging from Biology, Ecology and Environmental Science to Medicine, Law, Military and Social Sciences. A parallel discussion of analyses with the normal density, proportions (binomial), counts (Poisson) and bootstrap methods. Two extensive indexes that include references to every R function (and its arguments and packages used in the book) and to every introduced concept.

Essential Mathematical Biology Nicholas Britton 2005-12-16 This self-contained introduction to the fast-growing field of Mathematical Biology is written for students with a mathematical background. It sets the subject in a historical context and guides the reader towards questions of current research interest. A broad range of topics is covered including: Population dynamics, Infectious diseases, Population genetics and evolution, Dispersal, Molecular and cellular biology, Pattern formation, and Cancer modelling. Particular attention is paid to situations where the simple assumptions of homogeneity made in early models break down and the process of mathematical modelling is seen in action.

Evolution: a Very Short Introduction Brian Charlesworth 2017-06-22 Less than 450 years ago, all European scholars believed that the Earth was at the centre of a Universe that was at most a few million miles in extent, and that the planets, sun, and stars all rotated around this centre. Less than 250 years ago, they believed that the Universe was created essentially in its present state about 6000 years ago. Even less than 150 years ago, the view that living species were the result of special creation by God was still dominant. The recognition by Charles Darwin and Alfred Russel Wallace of the mechanism of evolution by natural selection has completely transformed our understanding of the living world, including our own origins. In this Very Short Introduction Brian and Deborah Charlesworth provide a clear and concise summary of the process of evolution by natural selection, and how natural selection gives rise to adaptations and eventually, over many generations, to new species. They introduce the central concepts of the field of evolutionary biology, as they have developed since Darwin and Wallace on the subject, over 140 years ago, and discuss some of the remaining questions regarding processes. They highlight the wide range of evidence for evolution, and the importance of an evolutionary understanding for instance in combating the rapid evolution of resistance by bacteria to antibiotics and of HIV to antiviral drugs. This reissue includes some key updates to the main text and a completely updated Further Reading section. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

40 Inquiry Exercises for the College Biology Lab A. Daniel Johnson 2009 Drawing from the author's own work as a lab developer, coordinator, and instructor, this one-of-a-kind text for college biology teachers uses the inquiry method in presenting 40 different lab exercises that make complicated biology subjects accessible to major and nonmajors alike. The volume offers a review of various aspects of inquiry, including teaching techniques, and covers 16 biology topics, including DNA isolation and analysis, properties of enzymes, and metabolism and oxygen consumption. Student and teacher pages are provided for each of the 16 topics.

International Review of Cytology 1992-12-02 International Review of Cytology

Molecular Biology of the Cell Bruce Alberts 2004

Genetics and Sports M. Posthumus 2016-06-10 This second edition of Genetics and Sports expands on topics previously discussed in an attempt to create an integrated and holistic understanding of the field of sports genomics. It is an update on technologies and on the role of genetics in training, performance, injury, and other exercise-related phenotypes. Ethical concerns and the importance of counselling before and after genetic testing are also addressed. It is increasingly important to understand the field of genetics and sports because of the potential to use and misuse information. All exercise scientists, sport and exercise clinicians, athletes, and coaches need to be adequately informed to ensure that genetic information is accurately and properly used. Genetics and Sports is, therefore, highly recommended to all of these groups.

Mendel's Principles of Heredity William Bateson 2007-11-01 Gregor Mendel first began studying inheritance in pea plants in 1856. While Darwin may have convinced the scientific community that evolution occurred, Mendel discovered some of the rules for this process. By breeding hybrid plants together, he was able to determine that there were dominant and recessive traits. And these traits would appear with a predictable and particular frequency in a given set of offspring. Mendel's Principles of Heredity is the 1913 translation, with added commentary, of Mendel's original work by British scientist WILLIAM BATESON (1861-1926), who coined the term genetics to refer to heredity and inherited traits. Anyone with an interest in science and genetics will find a wealth of information about one of the most revolutionary insights in modern science.

The Theory of the Gene Thomas Hunt 1866-1945 Morgan 2021-09-09 This work has been selected by scholars as being culturally important and is part of the knowledge base of civilization as we know it. This work is in the public domain in the United States of America, and possibly other nations. Within the United States, you may freely copy and distribute this work, as no entity (individual or corporate) has a copyright on the body of the work. Scholars believe, and we concur, that this work is important enough to be preserved, reproduced, and made generally available to the public. To ensure a quality reading experience, this work has been proofread and republished using a format that seamlessly blends the original graphical elements with text in an easy-to-read typeface. We appreciate your support of the preservation process, and thank you for being an important part of keeping this knowledge alive and relevant. *Children's Health, the Nation's Wealth* Institute of Medicine 2004-10-18 Children's health has clearly improved over the past several decades. Significant and positive gains have been made in lowering rates of infant mortality and morbidity from infectious diseases and accidental causes, improved access to health care, and reduction in the effects of environmental contaminants such as lead. Yet major questions still remain about how to assess the status of children's health, what factors should be monitored, and the appropriate measurement tools that should be used. Children's Health, the Nation's Wealth: Assessing and Improving Child Health provides a detailed examination of the information about children's health that is needed to help policy makers and program providers at the federal, state, and local levels. In order to improve children's health-and, thus, the health of future generations-it is critical to have data that can be used to assess both current conditions and possible future threats to children's health. This compelling book describes what is known about the health of children and what is needed to expand the knowledge. By strategically improving the health of children, we ensure healthier future generations to come.

Population Genetics and Microevolutionary Theory Alan R. Templeton 2006-09-29 The advances made possible by the development of molecular techniques have in recent years revolutionized quantitative genetics and its relevance for population genetics. Population Genetics and Microevolutionary Theory takes a modern approach to population genetics, incorporating modern molecular biology, species-level evolutionary biology, and a thorough acknowledgment of quantitative genetics as the theoretical basis for population genetics. Logically organized into three main sections on population structure and history, genotype-phenotype interactions, and selection/adaptation Extensive use of real examples to illustrate concepts Written in a clear and accessible manner and devoid of complex mathematical equations Includes the author's introduction to background material as well as a conclusion for a handy overview of the field and its modern applications Each chapter ends with a set of review questions and answers Offers helpful general references and Internet links

Oxford Handbook of Genetics Guy Bradley-Smith 2009-10-29 Genetics is a rapidly changing field, making it difficult for Primary Care practitioners to keep up to date. This book is a collaboration between 2 consultant geneticists, and 2 experienced GPs. This small book provides accessible information, including explanatory diagrams and family trees, about both specific genetic diseases and the possible genetic components of major diseases, such as heart disease and diabetes, for the primary health care team. It aims to help practitioners to know why, when and where they should refer patients or affected families to get the best advice about, or surveillance of, genetic disease. It also contains information about the genetic testing which may be offered in secondary care. Each chapter also contains a list of resources which might be of further use to the practitioner or their patient. There are chapters on cancer, as well as antenatal screening, and specific problems that may arise from such screening.

Annotated Instructor's Edition for Investigating Biology Judith Giles Morgan 1999

Genes, Behavior, and the Social Environment Institute of Medicine 2006-12-07 Over the past century, we have made great strides in reducing rates of disease and enhancing people's general health. Public health measures such as sanitation, improved hygiene, and vaccines; reduced hazards in the workplace; new drugs and clinical procedures; and, more recently, a growing understanding of the human genome have each played a role in extending the duration and raising the quality of human life. But research conducted over the past few decades shows us that this progress, much of which was based on investigating one causative factor at a time—often, through a single discipline or by a narrow range of practitioners—can only go so far. Genes, Behavior, and the Social Environment examines a number of well-described gene-environment interactions, reviews the state of the science in researching such interactions, and recommends priorities not only for research itself but also for its workforce, resource, and infrastructural needs.

Nucleic Acid Polymerases Katsuhiko S. Murakami 2013-10-22 This book provides a review of the multitude of nucleic acid polymerases, including DNA and RNA polymerases from Archea, Bacteria and Eukaryota, mitochondrial and viral polymerases, and other specialized polymerases such as telomerase, template-independent terminal nucleotidyl transferase and RNA self-replication ribozyme. Although many books cover several different types of polymerases, no book so far has attempted to catalog all nucleic acid polymerases. The goal of this book is to be the top reference work for postgraduate students, postdocs, and principle investigators who study polymerases of all varieties. In other words, this book is for polymerase fans by polymerase fans. Nucleic acid polymerases play a fundamental role in genome replication, maintenance, gene expression and regulation. Throughout evolution these enzymes have been pivotal in transforming life towards RNA self-replicating systems as well as into more stable DNA genomes. These enzymes are generally extremely efficient and accurate in RNA transcription and DNA replication and share common kinetic and structural features. How catalysis can be so amazingly fast without loss of specificity is a question that has intrigued researchers for over 60 years. Certain specialized polymerases that play a critical role in cellular metabolism are used for diverse biotechnological applications and are therefore an essential tool for research.

Epigenetics of Aging Trygve O. Tollefsbol 2009-11-11 Recent studies have indicated that epigenetic processes may play a major role in both cellular and organismal aging. These epigenetic processes include not only DNA methylation and histone modifications, but also extend to many other epigenetic mediators such as the polycomb group proteins, chromosomal position effects, and noncoding RNA. The topics of this book range from fundamental changes in DNA methylation in aging to the most recent research on intervention into epigenetic modifications to modulate the aging process. The major topics of epigenetics and aging covered in this book are: 1) DNA methylation and histone modifications in aging; 2) Other epigenetic processes and aging; 3) Impact of epigenetics on aging; 4) Epigenetics of age-related diseases; 5) Epigenetic interventions and aging; and 6) Future directions in epigenetic aging research. The most studied of epigenetic processes, DNA methylation, has been associated with cellular aging and aging of organisms for many years. It is now apparent that both global and gene-specific alterations occur not only in DNA methylation during aging, but also in several histone alterations. Many epigenetic alterations can have an impact on aging processes such as stem cell aging, control of telomerase, modifications of telomeres, and epigenetic drift can impact the aging process as evident in the recent studies of aging monozygotic twins. Numerous age-related diseases are affected by epigenetic mechanisms. For example, recent studies have shown that DNA methylation is altered in Alzheimer's disease and autoimmunity. Other prevalent diseases that have been associated with age-related epigenetic changes include cancer and diabetes. Paternal age and epigenetic changes appear to have an effect on schizophrenia and epigenetic silencing has been associated with several of the progeroid syndromes of premature aging. Moreover, the impact of dietary or drug intervention into epigenetic processes as they affect normal aging or age-related diseases is becoming increasingly feasible.

Sports, Exercise, and Nutritional Genomics Debmalya Barh 2019-08-25 Sports, Exercise, and Nutritional Genomics: Current Status and Future Directions is the first reference volume to offer a holistic examination of omics-driven advances across different aspects of exercise and sports physiology, biochemistry, sports medicine, psychology, anthropology, and sports nutrition; and highlighting the opportunities towards advance personalized training and athlete health management. More than 70 international experts from 14 countries have discussed key exercise and sport-related themes through the prism of genomics, epigenomics, transcriptomics, proteomics, metabolomics, telomere biology, talent in sport, individual differences in response to regular physical activity, that in the future may empower coaches, sports physicians, fitness experts, genetic counselors, and translational scientists to employ various omics data and approaches in improving health and physical performance of people participating in sports and exercise activities. Contributors address current knowledge of genetic influence on athletic performance, individual responses to exercise training, as well as the genetics of musculoskeletal phenotypes, exercise-related injuries, flexibility, and neurodegenerative disorders in athletes. Finally, performance-related and psychological traits associated with epigenetic, transcriptomic and metagenomic biomarkers are also considered, along with nutritional and pharmacogenomic aids in sports medicine and personalized nutrition. Effectively synthesizes key themes across molecular aspects of exercise and sports sciences Provides a knowledge base for future translation of omics solutions to talent identification, individualized training, and nutrition Features contributions from international experts (researchers and clinicians) in the subject area

Molecular Exercise Physiology Henning Wackerhage 2014 'Molecular Exercise Physiology: An Introduction' is the first student-friendly textbook to be published on this key topic in contemporary sport and exercise science. It introduces sport and exercise genetics and the molecular mechanisms by which exercise causes adaptation and various related topics. The text is always linked to real life sport and exercise science situations such as 'what makes people good at distance running?', 'what DNA sequence variations code for a high muscle mass?' or 'by what mechanisms does exercise improve type2 diabetes?' The book includes a full range of useful features, such as summaries, definitions of key terms, guides to further reading, review questions, personal comments by molecular exercise pioneers (Booth, Bouchard) and leading research in the field, as well as descriptions of research methods. A companion website offers interactive and downloadable resources for both student and lecturers. Structured around central themes in sport and exercise science, such as nutrition, endurance training, resistance training, exercise & chronic disease and ageing, this book is the perfect foundation around which to build a complete upper-level undergraduate or postgraduate course on molecular exercise physiology."

Experiments in Plant Hybridisation Gregor Mendel 2008-11-01 Experiments which in previous years were made with ornamental plants have already afforded evidence that the hybrids, as a rule, are not exactly intermediate between the parental species. With some of the more striking characters, those, for instance, which relate to the form and size of the leaves, the pubescence of the several parts, etc., the intermediate, indeed, is nearly always to be seen; in other cases, however, one of the two parental characters is so preponderant that it is difficult, or quite impossible, to detect the other in the hybrid. from 4. The Forms of the Hybrid One of the most influential and important scientific works ever written, the 1865 paper Experiments in Plant Hybridisation was all but ignored in its day, and its author, Austrian priest and scientist GREGOR JOHANN MENDEL (18221884), died before seeing the dramatic long-term impact of his work, which was rediscovered at the turn of the 20th century and is now considered foundational to modern genetics. A simple, eloquent description of his 18561863 study of the inheritance of traits in pea plantsMendel analyzed 29,000 of themthis is essential reading for biology students and readers of science history. Cosimo presents this compact edition from the 1909 translation by British geneticist WILLIAM BATESON (18611926).

Assessing Genetic Risks Institute of Medicine 1994-01-01 Raising hopes for disease treatment and prevention, but also the specter of discrimination and "designer genes," genetic testing is potentially one of the most socially explosive developments of our time. This book presents a current assessment of this rapidly evolving field, offering principles for actions and research and recommendations on key issues in genetic testing and screening. Advantages of early genetic knowledge are balanced with issues associated with such knowledge: availability of treatment, privacy and discrimination, personal decisionmaking, public health objectives, cost, and more. Among the important issues covered: Quality control in genetic testing. Appropriate roles for public agencies, private health practitioners, and laboratories. Value-neutral education and counseling for persons considering testing. Use of test results in insurance, employment, and other settings.

Concepts of Biology Samantha Fowler 2018-01-07 Concepts of Biology is designed for the single-semester introduction to biology course for non-science majors, which for many students is their only college-level science course. As such, this course represents an important opportunity for students to develop the necessary knowledge, tools, and skills to make informed decisions as they continue with their lives. Rather than being mired down with facts and vocabulary, the typical non-science major student needs information presented in a way that is easy to read and understand. Even more importantly, the content should be meaningful. Students do much better when they understand why biology is relevant to their everyday lives. For these reasons, Concepts of Biology is grounded on an evolutionary basis and includes exciting features that highlight careers in the biological sciences and everyday applications of the concepts at hand. We also strive to show the interconnectedness of topics within this extremely broad discipline. In order to meet the needs of today's instructors and students, we maintain the overall organization and coverage found in most syllabi for this course. A strength of Concepts of Biology is that instructors can customize the book, adapting it to the approach that works best in their classroom. Concepts of Biology also includes an innovative art program that incorporates critical thinking and clicker questions to help students understand--and apply--key concepts.

Prob. On Genetics Molecular Genetics & Evolutionary Genetics Pranab K. Banerjee 2009

The Selfish Gene Richard Dawkins 1989 An ethologist shows man to be a gene machine whose world is one of savage competition and deceit