An Introduction to Human Molecular Genetics Second Edition Jack J. Pasternak The Second Edition of this internationally acclaimed text expands its coverage of the molecular genetics of inherited human diseases with the latest research findings and discoveries. Using a unique, systems-based approach, the text offers readers a thorough explanation of the gene discovery process and how defective genes are linked to inherited disease states in major organ and tissue systems. All the latest developments in functional genomics, proteomics, and microarray technology have been thoroughly incorporated into the text. The first part of the text introduces readers to the fundamentals of cytogenetics and Mendelian genetics. Next, techniques and strategies for gene manipulation, mapping, and isolation are reexamined. Readers will particularly appreciate the text's exceptionally thorough and clear explanation of genetic mapping. The final part features unique coverage of the molecular genetics of distinct biological systems, covering muscle, neurological, eye, cancer, and mitochondrial disorders. Throughout the text, helpful figures and diagrams illustrate and clarify complex material. Readers familiar with the first edition will recognize the text's same lucid and engaging style, and will find a wealth of new and expanded material that brings them fully up to date with a current understanding of the field, including: * New chapters on complex genetic disorders, genomic imprinting, and human population genetics * Expanded and fully revised section...
on clinical genetics, covering diagnostic testing, molecular screening, and various treatments. This text is targeted at upper-level undergraduate students, graduate students, and medical students. It is also an excellent reference for researchers and physicians who need a clinically relevant reference for the molecular genetics of inherited human diseases.

This book covers the statistical models and methods that are used to understand human genetics, following the historical and recent developments of human genetics. Starting with Mendel’s first experiments to genome-wide association studies, the book describes how genetic information can be incorporated into statistical models to discover disease genes. All commonly used approaches in statistical genetics (e.g. aggregation analysis, segregation, linkage analysis, etc), are used, but the focus of the book is modern approaches to association analysis. Numerous examples illustrate key points throughout the text, both of Mendelian and complex genetic disorders. The intended audience is statisticians, biostatisticians, epidemiologists and quantitatively-oriented geneticists and health scientists wanting to learn about statistical methods for genetic analysis, whether to better analyze genetic data, or to pursue research in methodology. A background in intermediate level statistical methods is required. The authors include few mathematical derivations, and the exercises provide problems for students with a broad range of skill levels. No background in genetics is assumed.

A clear and straightforward explanation of genetics in this new edition of the popular 101 series. Our genetic makeup determines so much about who we are, and what we pass on to our children—from eye color, to height, to health, and even our longevity. Genetics 101 breaks down the science of how genes are inherited and passed from parents to offspring, what DNA is and how it works, how your DNA affects your health, and how you can use your personal genomics to find out more about who you are and where you come from. Whether you’re looking for a better scientific understanding of genetics, or looking into your own DNA, Genetics 101 is your go-to source to discover more about both yourself and your ancestry.

This fully updated edition provides selected mouse genetic techniques and their application in modeling varieties of human diseases. The chapters are mainly focused on the generation of different transgenic mice to accomplish the manipulation of genes of interest, tracing cell lineages, and modeling human diseases. Written for the highly successful Methods in Molecular Biology series, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step,
readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Authoritative and up-to-date, Mouse Genetics: Methods and Protocols, Second Edition delivers fundamental techniques and protocols to geneticists, molecular biologists, cell and developmental biologists, students, and postdoctoral fellows working in the various disciplines of genetics, developmental biology, mouse genetics, and modeling human diseases.

A complete background to concepts and principles of behavioral genetics, Neurobehavioral Genetics: Methods and Applications, Second Edition features a broad spectrum of the most current techniques in neurobehavioral genetics in a single source. International researchers incorporate several new developments in the field, including: De

The aim of this volume is to make computer programs for analyzing human genetic data more easily accessible to the beginner. Statistical Human Genetics: Methods and Protocols, Second Edition provides updated and new chapters detailing genetic terms, analysis software, and how to interpret the program outputs. Written in the highly successful Methods in Molecular Biology series format, the chapters include introductions to their respective topics, step-by-step instructions, and tips on troubleshooting and avoiding known pitfalls. The purpose of Statistical Human Genetics: Methods and Protocols, Second Edition is to ensure successful and meaningful results in the fast-growing field of genetic epidemiology.

The Principles of Biology sequence (BI 211, 212 and 213) introduces biology as a scientific discipline for students planning to major in biology and other science disciplines. Laboratories and classroom activities introduce techniques used to study biological processes and provide opportunities for students to develop their ability to conduct research.

With recent studies using genetic, epigenetic, and other molecular and neurochemical approaches, a new era has begun in understanding pathophysiology of suicide. Emerging evidence suggests that neurobiological factors are not only critical in providing potential risk factors but also provide a promising approach to develop more effective treatment and prevention strategies. The Neurobiological Basis of Suicide discusses the most recent findings in suicide neurobiology. Psychological, psychosocial, and cultural factors are important in determining the risk factors for suicide; however, they offer weak prediction and can be of little clinical use. Interestingly, cognitive characteristics are different among depressed suicidal and depressed nonsuicidal subjects, and could be involved in the development of
suicidal behavior. The characterization of the neurobiological basis of suicide is in delineating the risk factors associated with suicide. The Neurobiological Basis of Suicide focuses on how and why these neurobiological factors are crucial in the pathogenic mechanisms of suicidal behavior and how these findings can be transformed into potential therapeutic applications.

This volume of the esteemed Progress in Molecular Biology and Translational Science series focuses on cutting-edge research related to the genetics of cardiovascular disease. Written by top experts in the field, this volume covers a range of topics, including: Genetic models of atherosclerosis MicroRNAs in cardiovascular disease The role of the transcription factor KLF2 in vascular development and disease Zebrafish as models of cardiovascular disease and hematopoietic development Progress in Molecular Biology and Translational Science provides a forum for discussion of new discoveries, approaches, and ideas in molecular biology. It contains contributions from leaders in their fields and abundant references. The authors are all experts in the field. The reviews are in themselves comprehensive. Each topic has the potential to lead to advances in therapy of cardiovascular disease.

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.

This impressive author team brings the wealth of advances in conservation genetics into the new edition of this introductory text, including new chapters on population genomics and genetic issues in introduced and invasive species. They continue the strong learning features for students – main points in the margin, chapter summaries, vital support with the mathematics, and further reading – and now guide the reader to software and databases. Many new references reflect the expansion of this field. With examples from mammals, birds,
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).

This has been the indispensable companion of chicken breeders since its introduction in 1949. Chapters include the genetics of plumage, egg production, body size, disease resistance, and much more. (Animals/Pets)

DNA methylation is the modification of DNA molecule, transferring methyl group to the 5th position of the cytosine pyrimidine ring. This biochemical process plays a crucial role in many cellular processes of higher organisms. For example, people have found distinct patterns of DNA methylation during cellular differentiation and tissue development. The differential DNA methylation profiles are often associated with gene expression. In addition, DNA methylation reveals genomic imprinting and affects on chromatin remodeling and cellular homeostasis. Such epigenetic modification has also been proven to be involved in nearly all cancer-related signaling pathways. However, the mechanism and process against how DNA methylation regulates gene expression are still not clear. The study of DNA methylation and its regulation on gene expression provides fundamental and new insights into the genetic heritability. In Chapter 1, Gene duplication event of NAC transcription factor genes in rice and Arabidopsis was analyzed, then it was found that chromosomal segment duplications mainly contributed to the expansion of both species, whereas tandem duplication occurred less frequently in Arabidopsis than rice. Chapter 2 reviews the current literature related to the epigenetics of alcoholism and summarizes our advanced study of global DNA methylation in human post-mortem frontal cortex tissues obtained from adult alcoholics and controls utilizing new microarray technology and bioinformatics approaches. Chapter 3 gives a
comprehensive synopsis over the epigenetic modifications involved in the regulation of bacterial gene expression as well as the patho-epigenetic modifications in eukaryotic host tissues triggered in the pathogenesis of particular Gram-negative bacterial infections. Both, basic molecular mechanisms and complex pathogenetic relations are described. Chapter 4 provides an epigenetic repressing mechanism for breast cancer metastasis by recruiting NuRD complex to ESR1 gene through TWIST1. Chapter 5 summarises most of mouse models that have helped us better understand the pathogenesis mechanism during the development of colitis. In Chapter 6, the authors review the various forms of presentation of celiac disease including the lymphocytic enteritis, along with their systemic manifestations. Chapter 7 provides an insight to inflammatory response in light of DNA regulation and methylation of key players. Because chronic inflammatory diseases do share common features, recent progress in our understanding of renal fibrosis and inflammation in chronic kidney disease will be discussed as an example of epigenetic regulation in inflammatory diseases. Chapter 8 summarizes the regulation of gene expression in pterygium. Pterygium is an ocular surface disease and its pathogenesis is currently unknown. Here, the genetic and epigenetic changes in the disease are explored. Chapter 9 summaries the basics and applications of recently proposed MiRaGE method that infer miRNA-mediated regulation of target genes and miRNA-targeting-specific promoter methylation. The applications to differentiation, cell senescence, and miRNA transfection to lung cancer celll lines are discussed. Chapter 10 proposes the role of AP-1 chromatin modulator Jun dimerization protein 2 (JDP2) on antioxidant response and inhibition of ROS production via Nrf2-ARE signaling, as well as the induction of replicative senescence. Chapter 11 compares expression profiles of mRNAs, microRNAs and proteins of human embryonic stem cells hES-T3 grown on different feeders and conditioned media. Chapter 12 reviews the most recent molecular markers of Amyotrophic Lateral Sclerosis (ALS) and shows some innovative perspectives on this topic from the point of view of gene therapy. In addition, non-viral gene therapy based on the non-toxic C-terminal fragment of the tetanus toxin (TTC) will also be discussed.

This second volume continues with a focus on the state of the art in genetic eye research in Asia and the Pacific. Though there has been an explosion of information on genetic eye research in western countries, more than sixty percent of the human genes involved in eye diseases in the Asian and Pacific population remain unknown. However, new efforts and a new awareness have sparked important discussions on the subject, and new plans are being implemented to discover the genes responsible for many eye diseases in the population. The book reviews the latest findings; its content ranges from genetic aspects of human migration to DNA sequence analysis, genome-wide association analysis, and disease phenotypes. The efforts
of the Asian Eye Genetic Consortium (AEGC) are also discussed. The book’s editors have been instrumental in developing strategies for discovering the new Asian genes involved in many eye diseases. All chapters were written by leading researchers working on Asian eye genetics from the fields of Human Genetics, Ophthalmology, Molecular Biology, Biochemistry, Sensory Sciences, and Clinical Research. Advances in Vision Research, Volume II will prove to be a major resource for all researchers, clinicians, clinical researchers, and allied eye health professionals with an interest in eye diseases among the Asian population.

Fifty years ago, James D. Watson, then just twentyfour, helped launch the greatest ongoing scientific quest of our time. Now, with unique authority and sweeping vision, he gives us the first full account of the genetic revolution—from Mendel’s garden to the double helix to the sequencing of the human genome and beyond. Watson’s lively, panoramic narrative begins with the fanciful speculations of the ancients as to why “like begets like” before skipping ahead to 1866, when an Austrian monk named Gregor Mendel first deduced the basic laws of inheritance. But genetics as we recognize it today—with its capacity, both thrilling and sobering, to manipulate the very essence of living things—came into being only with the rise of molecular investigations culminating in the breakthrough discovery of the structure of DNA, for which Watson shared a Nobel prize in 1962. In the DNA molecule’s graceful curves was the key to a whole new science. Having shown that the secret of life is chemical, modern genetics has set mankind off on a journey unimaginable just a few decades ago. Watson provides the general reader with clear explanations of molecular processes and emerging technologies. He shows us how DNA continues to alter our understanding of human origins, and of our identities as groups and as individuals. And with the insight of one who has remained close to every advance in research since the double helix, he reveals how genetics has unleashed a wealth of possibilities to alter the human condition—from genetically modified foods to genetically modified babies—and transformed itself from a domain of pure research into one of big business as well. It is a sometimes topsy-turvy world full of great minds and great egos, driven by ambitions to improve the human condition as well as to improve investment portfolios, a world vividly captured in these pages. Facing a future of choices and social and ethical implications of which we dare not remain uninformed, we could have no better guide than James Watson, who leads us with the same bravura storytelling that made The Double Helix one of the most successful books on science ever published. Infused with a scientist’s awe at nature’s marvels and a humanist’s profound sympathies, DNA is destined to become the classic telling of the defining scientific saga of our age.

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.

Genetic Variation: A Laboratory Manual is the first compendium of protocols specifically geared towards genetic variation studies, and includes thorough discussions on their applications for human and model organism studies. Intended for graduate students and professional scientists in clinical and research settings, it covers the complete spectrum of genetic variation—from SNPs and microsatellites to more complex DNA alterations, including copy number variation. Written and edited by leading scientists in the field, the early sections of the manual are devoted to study design and generating genotype data, the use of resources such as HapMap and dbSNP, as well as experimental, statistical, and bioinformatic approaches for analyzing the data. The final sections include descriptions of genetic variation in model organisms and discussions of recent insights into human genetic ancestry, forensics, and human variation.

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.

This book provides a comprehensive coverage of the state of the art in precision medicine in stroke. It starts by explaining and giving general information about precision medicine. Current applications in different strokes types (ischemic, haemorrhagic) are presented from diagnosis to treatment. In addition, ongoing research in the field (early stroke diagnosis and estimation of prognosis) is extensively discussed. The final part provides an in-depth discussion of how different interdisciplinary areas like artificial intelligence, molecular biology and genetics are contributing to this area. Precision Medicine in Stroke provides a practical approach to each chapter, reinforcing clinical applications and presenting clinical cases. This book is intended for all clinicians that interact with stroke patients (neurologists, internal medicine doctors, general practitioners, neurosurgeons), students and basic researchers.

Updated to reflect the latest discoveries in the field, the Fifth Edition of Hartl's classic text provides an accessible, student-friendly introduction to contemporary genetics. Designed for the shorter, less comprehensive introductory course, Essential Genetics: A Genomic Perspective, Fifth Edition includes carefully chosen topics that provide a solid foundation to the basic understanding of gene mutation, expression, and regulation. New and updated sections on genetic analysis, molecular genetics, probability in genetics, and pathogenicity islands ensure that students are kept up-to-date on current key topics. The text also provides students with a sense of the social and historical context in which genetics has developed. The updated companion web site provides numerous study tools, such as animated flashcards, crosswords, practice quizzes and more! New and expanded end-of-chapter material allows for a mastery of key genetics concepts and is ideal for homework assignments and in-class discussion.

Despite the substantial interest in landscape genetics from the scientific community, learning about the concepts and methods underlying the field remains very challenging. The reason for this is the highly interdisciplinary nature of the field, which combines population genetics, landscape ecology, and spatial statistics. These fields have traditionally been treated separately in classes and textbooks, and very few scientists have received the interdisciplinary training necessary to efficiently teach or apply the diversity of techniques encompassed by landscape genetics. To address the current knowledge gap, this
book provides the first in depth treatment of landscape genetics in a single volume. Specifically, this book delivers fundamental concepts and methods underlying the field, covering particularly important analytical methods in detail, and presenting empirical and theoretical applications of landscape genetics for a variety of environments and species. Consistent with the interdisciplinary nature of landscape genetics, the book combines an introductory, textbook like section with additional sections on advanced topics and applications that are more typical of edited volumes. The chapter topics and the expertise of the authors and the editorial team make the book a standard reference for anyone interested in landscape genetics. The book includes contributions from many of the leading researchers in landscape genetics. The group of scientists we have assembled has worked on several collaborative projects over the last years, including a large number of peer reviewed papers, several landscape genetics workshops at international conferences, and a distributed graduate seminar on landscape genetics. Based on the experiences gained during these collaborative teaching and research activities, the book includes chapters that synthesize fundamental concepts and methods underlying landscape genetics (Part 1), chapters on advanced topics that deserve a more in depth treatment (Part 2), and chapters illustrating the use of concepts and methods in empirical applications (Part 3). This structure ensures a high usefulness of the book for beginning landscape geneticists and experienced researchers alike, so that it has a broad target audience. At least one of the four co editors is involved in almost every chapter of the book, thereby ensuring a high consistency and coherency among chapters.

Principles and Practice of Sleep Medicine, 5th Edition, by Meir H. Kryger, MD, FRCPC, Thomas Roth, PhD, and William C. Dement, MD, PhD, delivers the comprehensive, dependable guidance you need to effectively diagnose and manage even the most challenging sleep disorders. Updates to genetics and circadian rhythms, occupational health, sleep in older people, memory and sleep, physical examination of the patient, comorbid insomnias, and much more keep you current on the newest areas of the field. A greater emphasis on evidence-based approaches helps you make the most well-informed clinical decisions. And, a new more user-friendly, full-color format, both in print and online, lets you find the answers you need more quickly and easily. Whether you are preparing for the new sleep medicine fellowship examination, or simply want to offer your patients today's best care, this is the one resource to use! Make optimal use of the newest scientific discoveries and clinical approaches that are advancing the diagnosis and management of sleep disorders.

This impressive author team brings the wealth of advances in conservation genetics into the new edition of this introductory text, including new chapters on population genomics and genetic issues in introduced
and invasive species. They continue the strong learning features for students - main points in the margin, chapter summaries, vital support with the mathematics, and further reading - and now guide the reader to software and databases. Many new references reflect the expansion of this field. With examples from mammals, birds, reptiles, fish, amphibians, plants and invertebrates, this is an ideal introduction to conservation genetics for a broad audience. The text tackles the quantitative aspects of conservation genetics, and has a host of pedagogy to support students learning the numerical side of the subject. Combined with being up-to-date, its user-friendly writing style and first-class illustration programme forms a robust teaching package.

Now updated for its second edition, Population Genetics is the classic, accessible introduction to the concepts of population genetics. Combining traditional conceptual approaches with classical hypotheses and debates, the book equips students to understand a wide array of empirical studies that are based on the first principles of population genetics. Featuring a highly accessible introduction to coalescent theory, as well as covering the major conceptual advances in population genetics of the last two decades, the second edition now also includes end of chapter problem sets and revised coverage of recombination in the coalescent model, metapopulation extinction and recolonization, and the fixation index.

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conferences, and a distributed graduate seminar on landscape genetics. Based on the experiences gained during these collaborative teaching and research activities, the book includes chapters that synthesize fundamental concepts and methods underlying landscape genetics (Part 1), chapters on advanced topics that deserve a more in depth treatment (Part 2), and chapters illustrating the use of concepts and methods in empirical applications (Part 3). This structure ensures a high usefulness of the book for beginning landscape geneticists and experienced researchers alike, so that it has a broad target audience. At least one of the four co editors is involved in almost every chapter of the book, thereby ensuring a high consistency and coherency among chapters.

Molecular Biology is a rapidly advancing field with a constant flow of new information and cutting-edge developments that impact our lives. Lewin's GENES has long been the essential resource for providing the teaching community with the most modern presentation to this dynamic area of study. GENES XI continues this tradition by introducing the most current data from the field, covering gene structure, sequencing, organization, and expression. It has enlisted a wealth of subject-matter experts, from top institutions, to provide content updates and revisions in their individual areas of study. A reorganized chapter presentation provides a clear, more student-friendly introduction to course material than ever before. - Updated content throughout to keep pace with this fast-paced field. - Reorganized chapter presentation provides a clear, student-friendly introduction to course material. - Expanded coverage describing the connection between replication and the cell cycle is included, and presents eukaryotes as well as prokaryotes. - Available with new online Molecular Biology Animations. - Online access code for the companion website is included with every new book. The companion website offers numerous study aids and learning tools to help students get the most out of their course. - Instructor's supplements include: PowerPoint Image Bank, PowerPoint Lecture Slides, and Test Bank.

The first broad survey of the role of genetics in public health, with emphasis on the new molecular genetics.

Our genetic markers have come to be regarded as portals to the past. Analysis of these markers is increasingly used to tell the story of human migration; to investigate and judge issues of social membership and kinship; to rewrite history and collective memory; to right past wrongs and to arbitrate legal claims and human rights controversies; and to open new thinking about health and well-being. At the same time, in many societies genetic evidence is being called upon to perform a kind of racially charged
cultural work: to repair the racial past and to transform scholarly and popular opinion about the "nature" of identity in the present. Genetics and the Unsettled Past considers the alignment of genetic science with commercial genealogy, with legal and forensic developments, and with pharmaceutical innovation to examine how these trends lend renewed authority to biological understandings of race and history. This unique collection brings together scholars from a wide range of disciplines—biology, history, cultural studies, law, medicine, anthropology, ethnic studies, sociology—to explore the emerging and often contested connections among race, DNA, and history. Written for a general audience, the book's essays touch upon a variety of topics, including the rise and implications of DNA in genealogy, law, and other fields; the cultural and political uses and misuses of genetic information; the way in which DNA testing is reshaping understandings of group identity for French Canadians, Native Americans, South Africans, and many others within and across cultural and national boundaries; and the sweeping implications of genetics for society today.

Covering newsworthy aspects of contemporary biology—gene therapy, the Human Genome Project, DNA testing, and genetic engineering—as well as fundamental concepts, this book, written specifically for nonbiologists, discusses classical and molecular genetics, quantitative and population genetics—including cloning and genetic diseases—and the many applications of genetics to the world around us, from genetically modified foods to genetic testing. With minimal technical terminology and jargon, Genes and DNA facilitates conceptual understanding. Eschewing the organization of traditional genetics texts, the authors have provided an organic progression of information: topics are introduced as needed, within a broader framework that makes them meaningful for nonbiologists. The book encourages the reader to think independently, always stressing scientific background and current facts.

This book blends classical and modern genetic principles with neurobiological and ecological perspectives to teach students how to find and map genes that affect behaviors, as well as how the coordinated expression of ensembles of these genes enables the nervous system to express complex behaviors in response to changes in the environment. Principles of Behavioral Genetics introduces us to the fascinating science that aims to understand how our genes determine what makes us tick.

In the small â€œFly Roomâ€ at Columbia University, T.H. Morgan and his students, A.H. Sturtevant, C.B. Bridges, and H.J. Muller, carried out the work that laid the foundations of modern, chromosomal genetics. The excitement of those times, when the whole field of genetics was being created, is captured in this book, written in 1965 by one of those present at the beginning. His account is one of the few
authoritative, analytic works on the early history of genetics. This attractive reprint is accompanied by a website, http://www.esp.org/books/sturt/history/ offering full-text versions of the key papers discussed in the book, including the world's first genetic map.

The first book to comprehensively cover the field of systems genetics, gathering contributions from leading scientists.

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