

## By Tom Strachan Human Molecular Genetics Fourth Edition 4th Edition

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Human Molecular Genetics Garland Science

Philadelphia, 1959: A scientist scrutinizing a single human cell under a microscope detects a missing piece of DNA. That scientist, David Hungerford, had no way of knowing that he had stumbled upon the starting point of modern cancer research—the Philadelphia chromosome. It would take doctors and researchers around the world more than three decades to unravel the implications of this landmark discovery. In 1990, the Philadelphia chromosome was recognized as the sole cause of a deadly blood cancer, chronic myeloid leukemia, or CML. Cancer research would never be the same. Science journalist Jessica Wapner reconstructs more than forty years of crucial breakthroughs, clearly explains the science behind them, and pays tribute—with extensive original reporting, including more than thirty-five interviews—to the dozens of researchers, doctors, and patients with a direct role in this inspirational story. Their curiosity and determination would ultimately lead to a lifesaving treatment unlike anything before it. The Philadelphia Chromosome chronicles the remarkable change of fortune for the more than 70,000 people worldwide who are diagnosed with CML each year. It is a celebration of a rare triumph in the battle against cancer and a blueprint for future research, as doctors and scientists race to uncover and treat the genetic roots of a wide range of cancers.

Human Molecular Genetics has been carefully crafted over successive editions to provide an authoritative introduction to the molecular aspects of human genetics, genomics and cell biology. Maintaining the features that have made previous editions so popular, this fifth edition has been completely updated in line with the latest developments in the field. Older technologies such as cloning and hybridization have been merged and summarized, coverage of newer DNA sequencing technologies has been expanded, and powerful new gene editing and single-cell genomics technologies have been added. The coverage of GWAS, functional genomics, stem cells, and disease modeling has been expanded. Greater focus is given to inheritance and variation in the context of populations and on the role of epigenetics in gene regulation. Key features: Fully integrated approach to the molecular aspects of human genetics, genomics, and cell biology Accessible text is supported and enhanced throughout by superb artwork illustrating the key concepts and mechanisms Summary boxes at the end of each chapter provide clear learning points Annotated further reading helps readers navigate the wealth of additional information in this complex subject and provides direction for further study Reorganized into five sections for improved access to related topics Also new to this edition – brand new chapter on evolution and anthropology from the authors of the highly acclaimed Human Evolutionary Genetics A proven and popular textbook for upper-level undergraduates and graduate students, the new edition of Human Molecular Genetics remains

the 'go-to' book for those studying human molecular genetics or genomics courses around the world.

Providing the single most comprehensive and authoritative textbook on bacterial molecular genetics, this updated edition provides descriptive background information, detailed experimental methods, examples of genetic analyses, and advanced material relevant to current applications of molecular genetics.

The use of biostatistical techniques in molecular biology has grown tremendously in recent years and is now essential for the correct interpretation of a wide variety of laboratory studies. In *Biostatistical Methods*, a panel of leading biostatisticians and biomedical researchers describe all the key techniques used to solve commonly occurring analytical problems in molecular biology, and demonstrate how these methods can identify new markers for exposure to a risk factor, or for determining disease outcomes. Major areas of application include microarray analysis, proteomic studies, image quantitation, determining new disease biomarkers, and designing studies with adequate levels of statistical power. In the case of genetic effects in human populations, the authors describe sophisticated statistical methods to control the overall false-positive rate when many statistical tests are used in linking particular alleles to the occurrence of disease. Other methods discussed are those used to validate statistical approaches for analyzing the E-D association, to study the associations between disease and the inheritance of particular genetic variants, and to examine real data sets. There are also useful recommendations for statistical and data management software (JAVA, Oracle, S-Plus, STATA, and SAS). Accessible, state-of-the-art, and highly practical, *Biostatistical Methods* provides an excellent starting point both for statisticians just beginning work on problems in molecular biology, and for all molecular biologists who want to use biostatistics in genetics research designed to uncover the causes and treatments of disease.

*Analysis of Genes and Genomes* is a clear introduction to the theoretical and practical basis of genetic engineering, gene cloning and molecular biology. All aspects of genetic engineering in the post-genomic era are covered, beginning with the basics of DNA structure and DNA metabolism. Using an example-driven approach, the fundamentals of creating mutations in DNA, cloning in bacteria, yeast, plants and animals are all clearly presented. Newer technologies such as DNA micro and macroarrays, proteomics and bioinformatics are introduced in later chapters helping students to analyse and understand the vast amounts of data that are now available through genome sequence and function projects. Aimed at students with a basic knowledge of the molecular side of biology, this will be invaluable to those looking to better understand the complexities and capabilities of these important new technologies. A modern post-genome era introduction to key techniques used in genetic engineering. An example driven past-to-present approach to allow the experiments of today to be placed in an historical context Beautifully illustrated in full colour throughout. Associated website including updates, additional content and illustrations

*Adopted at Cambridge University Essential Medical Genetics* provides students, clinicians, counsellors and scientists with the up-to-date information they need regarding the basic principles underlying medical genetics. It also provides guidance on how to apply current knowledge in clinical contexts, covering a wide variety of topics: from genome structure and function to mutations, screening and risk assessment for inherited disorders. This sixth edition has been substantially updated to include, for instance,

the latest information on the Human Genome Project as well as several new molecular genetic and chromosome analysis techniques. In full colour throughout, it includes a number of brand new features, including: a large number of self-assessment questions; 'Essentials' chapter summaries; further reading suggestions; and case study scenarios introducing clinical situations. An invaluable new section gives illustrated practical advice regarding how to choose the best available online genetic databases and also, importantly, how to most easily and most efficiently use them, for a wide range of purposes. Essential Medical Genetics is the perfect resource for a course on medical genetics, and is now accompanied by a regularly updated website and the FREE enhanced Wiley Desktop Edition (upon purchase of the book). The companion website at [www.wiley.com/go/tobias](http://www.wiley.com/go/tobias) features figures from the book in PowerPoint format and a link to the authors' website with regularly updated links to genetic databases and additional self-test questions.

Human Molecular Genetics is an established and class-proven textbook for upper-level undergraduates and graduate students which provides an authoritative and integrated approach to the molecular aspects of human genetics. While maintaining the hallmark features of previous editions, the Fourth Edition has been completely updated. It includes new Key Concepts at the beginning of each chapter and annotated further reading at the conclusion of each chapter, to help readers navigate the wealth of information in this subject. The text has been restructured so genomic technologies are integrated throughout, and next generation sequencing is included. Genetic testing, screening, approaches to therapy, personalized medicine, and disease models have been brought together in one section. Coverage of cell biology including stem cells and cell therapy, studying gene function and structure, comparative genomics, model organisms, noncoding RNAs and their functions, and epigenetics have all been expanded.

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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.

The VitalBook e-book version of Protozoa and Human Disease is only available in the US and Canada at the present time. To purchase or rent please visit <http://store.vitalsource.com/show/978-1-1367-3816-6>. Protozoa and Human Disease is a textbook on medically important protozoa and the diseases they cause for advanced undergraduate students, graduate

Biology of Disease describes the biology of many of the human disorders and disease that are encountered in a clinical setting. It is designed for first and second year students in biomedical science programs and will also be a highly effective reference for health science professionals as well as being valuable to students beginning medical school. Real cases are used to illustrate the importance of biology in understanding the causes of diseases, as well as in diagnosis and therapy.

This is one of the first introductions to the sophisticated statistical methods that play a key role in research on human genetics. Topics include the estimation of allele frequencies, the testing for Hardy-Weinberg equilibrium, classical and complex segregation analysis, linkage analysis for Mendelian and complex diseases and quantitative traits, the detection of allelic associations, the estimation of heritability for multifactorial traits and path analysis

This is one of the few medical genetics texts on a 2-year revision cycle. It provides up-to-date information that can be read, retained, and applied with ease! The 3rd Edition covers pharmacogenomics, the societal implications of technologies, the Human Genome Project, cloning, genetic enhancement, and embryonic stem cell research, new tumor suppressor genes and oncogenes, and more. Mini-summaries, study questions, suggested readings, and a detailed glossary facilitate review of the material. Clinical relevance is demonstrated in over 230 photographs, illustrations, and tables as well as boxes containing patient/family vignettes. Its coverage includes ethical, legal, and social issues and clinical commentary on important genetic diseases. A companion web site offers continuing updates and a wealth of additional features. The smart way to study! Elsevier titles with STUDENT CONSULT will help you master difficult concepts and study more efficiently in print and online! Perform rapid searches. Integrate bonus content from other disciplines. Download text to your handheld device. And a lot more. Each STUDENT CONSULT title comes with full text online, a unique image library, case studies, USMLE style questions, and online note-taking to enhance your learning experience. Your purchase of this book entitles you to access [www.studentconsult.com](http://www.studentconsult.com) at no extra charge. This innovative web site offers you... Access to the complete text and illustrations of this book. Integration links to bonus content in other STUDENT CONSULT titles. Content clipping for your handheld. An interactive community center with a wealth of additional resources. The more STUDENT CONSULT titles you buy, the more resources you can access online! Look for the STUDENT CONSULT logo on your favorite Elsevier textbooks!

Computational Systems Biology: Inference and Modelling provides an introduction to, and overview of, network analysis inference approaches which form the backbone of the model of the complex behavior of biological systems. This book addresses the challenge to integrate highly diverse quantitative approaches into a unified framework by highlighting the relationships existing among network analysis, inference, and modeling. The chapters are light in jargon and technical detail so as to make them accessible to the non-specialist reader. The book is addressed at the heterogeneous public of modelers, biologists, and computer scientists. Provides a unified presentation of network inference, analysis, and modeling Explores the connection between math and systems biology, providing a framework to learn to analyze, infer, simulate, and modulate the behavior of complex biological systems Includes chapters in modular format for learning the basics quickly and in the context of questions posed by systems biology Offers a direct style and flexible formalism all through the exposition of mathematical concepts and biological applications Human Evolutionary Genetics is a groundbreaking text which for the first time brings together molecular genetics and genomics to the study of the origins and movements of human populations. Starting with an overview of molecular genomics for the non-specialist (which can be a useful review for those with a more genetic background), the book shows h

This is the second edition of a highly successful textbook (over 50,000 copies sold) in which a highly illustrated, narrative text is combined with easy-to-use thoroughly reliable laboratory protocols. It contains a fully up-to-date collection of 12 rigorously tested and reliable lab experiments in molecular biology, developed at the internationally renowned Dolan DNA Learning Center of Cold Spring Harbor Laboratory, which culminate in the construction and cloning of a recombinant DNA molecule. Proven through more than 10 years of teaching at research and nonresearch colleges and universities, junior colleges, community colleges, and advanced biology programs in high school, this book has been successfully integrated into introductory biology, general biology, genetics, microbiology, cell biology, molecular genetics, and molecular biology courses. The first eight chapters have been completely revised, extensively rewritten, and updated. The new coverage extends to the completion of the draft sequence of the human genome and the enormous impact these and other sequence data are having on medicine, research, and our view of human evolution. All sections on the concepts and techniques of molecular biology have been updated to reflect the current state of laboratory research. The laboratory experiments cover basic techniques of gene isolation and analysis, honed by over 10 years of classroom use to be thoroughly reliable, even in the hands of teachers and students with no prior experience. Extensive prelab notes at the beginning of each experiment explain how to schedule and prepare, while flow charts and icons make the protocols easy to follow. As in the first edition of this book, the laboratory course is completely supported by quality-assured products from the Carolina Biological Supply Company, from bulk reagents, to useable reagent systems, to single-use kits, thus satisfying a broad range of teaching applications.

The Blood and its Third Element is Béchamp's explanation of his position, and his defense of it against Pasteur's mischief. This final major work of Béchamp's embodies the culmination of his life's research. This book contains, in detail, the elements of the microzymian theory of the organization of living organisms and organic materials. It has immediate and far reaching relevance to the fields of immunology, bacteriology, and cellular biology; and it shows that more than 100 years ago, the germ, or microbial, theory of disease was demonstrated by Béchamp to be without foundation. There is no single cause of disease. The ancients thought this, and Béchamp proved it and was written out of history for his trouble. The relevance of his work to the dilemmas that plague modern medical science remains as yet unrealized.

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Never HIGHLIGHT a Book Again Includes all testable terms, concepts, persons, places, and events. Cram101 Just the FACTS101 studyguides gives all of the outlines, highlights, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanies: 9780872893795. This item is printed on demand.

The first book devoted exclusively to the principles and practice of genetic counseling—now in a new edition First published in 1998, *A Guide to Genetic Counseling* quickly became a bestselling and widely recognized text, used nationally and internationally in genetic counseling training programs. Now in its eagerly anticipated Second Edition, it provides a thoroughly revised and comprehensive overview of genetic counseling, focusing on the components, theoretical framework, and unique approach to patient care that are the basis of this profession. The book defines the core competencies and covers the genetic counseling process from case initiation to completion—in addition to addressing global professional issues—with an emphasis on describing fundamental principles and practices. Chapters are written by leaders in the field of genetic counseling and are organized to facilitate academic instruction and skill attainment. They provide the most up-to-date coverage of: The history and practice of genetic counseling Family history Interviewing Case preparation and management Psychosocial counseling Patient education Risk communication and decision-making Medical genetics evaluation Understanding genetic testing Medical documentation Multicultural counseling Ethical and legal issues Student supervision Genetic counseling research Professional development Genetics education and outreach Evolving roles and expanding opportunities Case examples *A Guide to Genetic Counseling, Second Edition* belongs on the syllabi of all medical and human genetics and genetic counseling training programs. It is an indispensable reference for both students and healthcare professionals working with patients who have or are at risk for genetic conditions.

Ancient DNA refers to DNA which can be recovered and analyzed from clinical, museum, archaeological and paleontological

specimens. Ancient DNA ranges in age from less than 100 years to tens of millions of years. The study of ancient DNA is a young field, but it has been revolutionized by the application of polymerase chain reaction technology, and interest is growing very rapidly. Fields as diverse as evolution, anthropology, medicine, agriculture, and even law enforcement have quickly found applications in the recovery of ancient DNA. This book contains contributions from many of the "first generation" researchers who pioneered the development and application of ancient DNA methods. Their chapters present the protocols and precautions which have resulted in the remarkable results obtained in recent years. The range of subjects reflects the wide diversity of applications that are emerging in research on ancient DNA, including the study of DNA to analyze kinship, recovery of DNA from organisms trapped in amber, ancient DNA from human remains preserved in a variety of locations and conditions, DNA recovered from herbarium and museum specimens, and DNA isolated from ancient plant seeds or compression fossils. Ancient DNA will serve as a valuable source of information, ideas, and protocols for anyone interested in this extraordinary field.

Review Questions of Clinical Molecular Genetics presents a comprehensive study guide for the board and certificate exams presented by the American College of Medical Genetics and Genomics (ACMG) and the American Board of Medical Genetics and Genomics (ABMGG). It provides residents and fellows in genetics and genomics with over 1,000 concise questions, ranging from topics in cystic fibrosis, to genetic counseling, to trinucleotide repeat expansion disorders. It puts key points in the form of questions, thus challenging the reader to retain knowledge. As board and certificate exams require knowledge of new technologies and applications, this book helps users meet that challenge. Includes over 1,000 multiple-choice, USMLE style questions to help readers prepare for specialty exams in Clinical Cytogenetics and Clinical Molecular Genetics Designed to assist clinical molecular genetic fellows, genetic counselors, medical genetic residents and fellows, and molecular pathologist residents in preparing for their certification exam Assists trainees on how to follow guidelines and put them in practice

A complete, up-to-the-minute account of human molecular genetics from basic principles to current practice. Designed to engage and motivate students the text covers the organization, expression and evolution of the human genome. Features a comprehensive chapter on the latest progress in the Human Genome Project.

Genomes 4 has been completely revised and updated. It is a thoroughly modern textbook about genomes and how they are investigated. As with Genomes 3, techniques come first, then genome anatomies, followed by genome function, and finally genome evolution. The genomes of all types of organism are covered: viruses, bacteria, fungi, plants, and animals including humans and other hominids. Genome sequencing and assembly methods have been thoroughly revised including a survey of four genome projects: human, Neanderthal, giant panda, and barley. Coverage of genome annotation emphasizes genome-wide RNA mapping, with CRISPR-Cas 9 and GWAS methods of determining gene function covered. The knowledge gained from these techniques forms the basis of the three chapters that describe the three main types of genomes: eukaryotic, prokaryotic (including eukaryotic organelles), and viral (including mobile genetic elements). Coverage of genome expression and replication is truly genomic, concentrating on the genome-wide implications of DNA packaging, epigenome modifications, DNA-binding proteins, non-coding RNAs, regulatory genome sequences, and protein-protein interactions. Also included are applications of transcriptome analysis, metabolomics, and systems biology. The final chapter is on genome evolution, focusing on the evolution of the

epigenome, using genomics to study human evolution, and using population genomics to advance plant breeding. Established methods of molecular biology are included if they are still relevant today and there is always an explanation as to why the method is still important. Each chapter has a set of short-answer questions, in-depth problems, and annotated further reading. There is also an extensive glossary.

Genomes 4 is the ideal text for upper level courses focused on genomes and genomics.

Recent developments within molecular biology and genetic engineering have led to huge advances and changes within the biological sciences especially within the field of human genetics. Diagnostic Techniques in Genetics offers an important overview of how DNA or RNA technology may be applied to a large set of genetic diagnoses. The first part of the book focuses on DNA/RNA applications and includes many of the latest developments in the field combined with routine procedures of genetic diagnoses, for example cloning and sequencing DNA. The DNA applications presented in the first chapter are then each applied to a specific kind of genetic diagnosis and the text concludes with a chapter devoted to population genetics. First published in French by Dunod in 2002, this book is an excellent reference for students taking courses in molecular biology, medicine and medical genetics. It is also a useful introduction for postgraduate students and researchers in the field who require a general overview of genetic diagnoses.

This fourth edition of the best-selling textbook, Human Genetics and Genomics, clearly explains the key principles needed by medical and health sciences students, from the basis of molecular genetics, to clinical applications used in the treatment of both rare and common conditions. A newly expanded Part 1, Basic Principles of Human Genetics, focuses on introducing the reader to key concepts such as Mendelian principles, DNA replication and gene expression. Part 2, Genetics and Genomics in Medical Practice, uses case scenarios to help you engage with current genetic practice. Now featuring full-color diagrams, Human Genetics and Genomics has been rigorously updated to reflect today's genetics teaching, and includes updated discussion of genetic risk assessment, "single gene" disorders and therapeutics. Key learning features include: Clinical snapshots to help relate science to practice 'Hot topics' boxes that focus on the latest developments in testing, assessment and treatment 'Ethical issues' boxes to prompt further thought and discussion on the implications of genetic developments 'Sources of information' boxes to assist with the practicalities of clinical research and information provision Self-assessment review questions in each chapter Accompanied by the Wiley E-Text digital edition (included in the price of the book), Human Genetics and Genomics is also fully supported by a suite of online resources at [www.korfgenetics.com](http://www.korfgenetics.com), including: Factsheets on 100 genetic disorders, ideal for study and exam preparation Interactive Multiple Choice Questions (MCQs) with feedback on all answers Links to online resources for further study Figures from the book available as PowerPoint slides, ideal for teaching purposes The perfect companion to the genetics component of both problem-based learning and integrated medical courses, Human Genetics and Genomics presents the ideal balance between the bio-molecular basis of genetics and clinical cases, and provides an invaluable overview for anyone wishing to engage with this fast-moving discipline.

Basic curiosity-driven biomedical science has delivered many of today's most significant medical advances. This book provides clearly explained examples from recent biomedical history and includes convincing arguments for sustaining a robust portfolio of basic research. Intended as an engaging read, which will delight undergraduate and graduate students, as well as scientific researchers, it is full-throated advocacy of basic science. Illustrations and examples include the discoveries of penicillin and insulin, and the breakthrough elucidation of the genetic code. Providing both compelling rationale in support of basic science, and a fascinating look through the history of modern biomedical research, this book highlights with stirring examples why basic biomedical research is so important, and how so many key advances in



medicine are derived from basic research. The book also offers a rationale for scientific inquiry and a broader understanding of the history of modern biomedical research missing from today's classrooms. Key Features 1) Provides clear explanations of great scientific discoveries 2) Illustrates connections between basic research findings and modern medicine 3) Includes compelling graphics/diagrams/illustrations 4) Accessible to the general public 5) Offers background for more specialized readers, including researchers as well as those with advanced degrees. Related Titles Staddon, J. Scientific Method: How Science Works, Fails to Work, and Pretends to Work (ISBN 978-1-1382-9536-0) Helliwell, J. R. Skills for Scientific Life (ISBN 978-1-4987-6875-7) MacRitchie, F. Scientific Research as a Career (ISBN 978-1-4398-6965-9) This book covers basic human genetics, details the techniques available for disease diagnosis and how these are used in the lab, before concluding with information on prenatal diagnosis, genetic counselling and ethics. This is the ideal handbook for biomedical science students and anyone working in a diagnostic genetics lab.

New Clinical Genetics provides all those involved in medical genetics with a unique clinical guide based on post-genomic technologies. This first edition has been superseded by a new edition, launched October 2010.

Professors Tom Strachan & Andrew Read awarded the Education Award 2007 of the ESHG for their outstanding contribution to the dispersal of knowledge of modern human molecular genetics among students and professionals. Following the completion of the Human Genome Project the content and organization of the third edition of Human Molecular Genetics has been thoroughly revised. \* Part One (Chapters 1-7) covers basic material on DNA structure and function, chromosomes, cells and development, pedigree analysis and the basic techniques used in the laboratory. \* Part Two (Chapters 8-12) discusses the various genome sequencing projects and the insights they provide into the organisation, expression, variation and evolution of our genome. \* Part Three (Chapters 13-18) focuses on mapping, identifying and diagnosing the genetic causes of mendelian and complex diseases and cancer. \* Part Four (Chapters 19-21) looks at the wider horizons of functional genomics, proteomics, bioinformatics, animal models and therapy. There are new chapters on cells and development and on functional genomics. The sections on complex diseases have been completely rewritten and reorganized, as has the chapter on Genome Projects. Other changes include a new section on molecular phylogenetics (Chapter 12) and the introduction of 'Ethics Boxes' to discuss some of the implications of the new knowledge. Virtually every page has been revised and updated to take account of the stunning developments of the past four years since the publication of the last edition of Human Molecular Genetics. Features: \* Integration of Human Genome Project data throughout the book \* Two new chapters 'Cells and Development' (Chapter 3) and 'Beyond the Genome Project: Functional Genomics, Proteomics and Bioinformatics' (Chapter 19) \* Completely rewritten and reorganised coverage of complex disease genetics \* Increased emphasis on gene function and on applications of genetic knowledge, including ethical issues \* More prominence given to novel approaches to treating disease, such as cell-based therapies, pharmacogenomics, and personalised medicine \* Special topic boxes that include detailed coverage of ethical, legal and social issues, including eugenics, genetic testing and discrimination, germ-line gene therapy and genetic enhancement, and human cloning \* Contains two indices: a general index and one that contains names of diseases and disorders Supplements: Art of HMG3 (CD-ROM) 0-8153-4183-0: £34.00

Genetics and Genomics in Medicine is a new textbook written for undergraduate students, graduate students, and medical researchers that explains the science behind the uses of genetics and genomics in medicine today. Rather than focusing narrowly on rare inherited and chromosomal disorders, it is a comprehensive and integrated account of how geneti

Epigenetics is the most exciting field in biology today, developing our understanding of how and why we inherit certain traits, develop diseases and age, and evolve as a species. This non-fiction comic book introduces us to genetics, cell biology and the fascinating science of epigenetics, which is rapidly filling in the gaps in our knowledge, allowing us to make huge advances in medicine. We'll look at what identical twins can teach us about the epigenetic effects of our environment and experiences, why certain genes are 'switched on' or off at various stages of embryonic development, and how scientists have reversed the specialization of cells to clone frogs from a single gut cell. In *Introducing Epigenetics*, Cath Ennis and Oliver Pugh pull apart the double helix, examining how the epigenetic building blocks and messengers that interpret and edit our genes help to make us, well, us.

Rev. ed. of: *Human molecular genetics 3* / Tom Strachan and Andrew Read. 3rd ed. c2004.

In response to many requests, the Third Edition of *A Primer of Population Genetics* has been dramatically shortened and streamlined for greater accessibility. Designed primarily for undergraduates, it will also serve for graduate students and professionals in biology and other sciences who desire a concise but comprehensive overview of the field with a primary focus on the integration of experimental results with theory. The abundance of experimental data generated by the use of molecular methods to study genetic polymorphisms sparked a transformation in the field of population genetics. Present in virtually all organisms, molecular polymorphisms allow populations to be studied without regard to species or habitat, and without the need for controlled crosses, mutant genes, or for any prior genetic studies. Thus a familiarity with population genetics has become essential for any biologist whose work is at the population level. These fields include evolution, ecology, systematics, plant breeding, animal breeding, conservation and wildlife management, human genetics, and anthropology. Population genetics seeks to understand the causes of genetic differences within and among species, and molecular biology provides a rich repertoire of techniques for identifying these differences.

*Hox Gene Expression* starts with the amazing discovery of the homeobox twenty-three years ago and follows the exciting path thereafter of a series of breakthroughs in Genetics, Development and Evolution. It deals with homeotic genes, their evolution, structure, normal and abnormal function. Researchers and graduate students in biology and medicine will benefit from this integrated overview of Hox gene activities.

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