Human Molecular Genetics 4th Edition

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.

In the new edition of this successful and authoritative book, the thalassaemias are reviewed in detail with respect to their clinical features, cellular pathology, molecular genetics, prevention and treatment. It is aimed at specialists in haematology in the laboratory or clinical setting, particularly in areas where thalassaemia is common either in the native population or in immigrant communities. The fourth edition has been both updated and re-organized. Three new chapters have been added on the link between alpha-thalassaemia and mental retardation, on avoidance and population control and on global epidemiology. Considerable emphasis is placed on molecular pathology reflecting the huge burst of information to have come out of this field in the last few years.

Crash Course – your effective everyday study companion PLUS the perfect antidote for exam stress! Save time and be assured you have all the core information you need in one place to excel on your course and achieve exam success. A winning formula now for over 15 years, each series volume has been fine-tuned and fully updated, with an improved layout tailored to make your life easier. Specially written by senior medical students or recent graduates – those who have just been in the exam situation – with all information thoroughly checked and quality assured by expert faculty advisors, the result is books which exactly meet your needs and you know you can trust. The subject of cell biology and genetics has never been more essential to the medical curriculum and to modern medicine – yet is widely feared by students. This fully revised edition aims to make it as easy to understand and remember as possible, to ensure a solid grounding in the essential underlying principles and how they relate to clinical practice. It incorporates the latest developments in this fascinating and fast-moving field – including the human genome project and spin-offs such as the thousand genome project – as well as discussion of important ethical issues. Emerging molecular tools and laboratory techniques are explained so that you can appreciate where new treatments for genetic disease and screening technologies have arisen. An updated self-assessment section matching the latest exam formats then allows you to assess your progress and test your performance. More than 180 illustrations present clinical, diagnostic and practical information in an easy-to-follow manner Friendly and accessible approach to the subject makes learning especially easy Written by students for students - authors who understand exam pressures Contains ‘Hints and Tips’ boxes, and other useful aide-mémoires Succinct coverage of the subject enables ‘sharp focus’ and efficient use of time during exam preparation Contains a fully updated self-assessment section - ideal for honing exam skills and self-testing Self-assessment section fully updated to reflect current exam requirements Contains ‘common exam pitfalls’ as advised by faculty Crash Courses also available electronically! Online self-assessment bank also available - content edited by Dan Horton-Szar!

This new edition of an essential text for all those working within transfusion and blood banking is now even more biologically and clinically relevant, incorporating the latest information on the genes for various blood groups and including greater content on the functional significance of blood groups. The book covers techniques used in blood grouping, troubleshooting and quality assurance and integrates serology with molecular biology, marrying the basic understanding at the genetic level with a cellular understanding of the red blood cell membrane. Now in full colour throughout.

Molecular Medicine is the application of genetic or DNA-based knowledge to the modern practice of medicine. Molecular Medicine, 4e, provides contemporary insights into how the genetic revolution is influencing medical thinking and practice. The new edition includes recent changes in personalized medicine, new growth in omics and direct-to-consumer DNA testing, while focusing on advances in the Human Genome project and implications of the advances in clinical medicine. Graduate students, researchers, clinicians and allied health professionals will appreciate the background history and clinical application of up-to-date molecular advances. Extensively revised to incorporate the results of the Human Genome Project, it provides the latest developments in molecular medicine The only book in Molecular Medicine to reach its fourth edition Identifies current practice as well as future developments Presents extensive tables, well presented figures and resources for further understanding

Molecular medicine is the application of gene or DNA based knowledge to the modern practice of medicine. This book provides contemporary insights into how the genetic revolution is influencing medical thinking and practice on a broad front including clinical medicine, innovative therapies and forensic medicine. Extensively revised just after the completion of the Human Genome Project, it provides the latest in molecular medicine developments The only book in Molecular Medicine that has undergone three editions Current practice as well as future developments identified Extensive tables, well presented figures - resources for further understanding

Molecular Biology or Molecular Genetics - Biology Department Biochemical Genetics - Biology or Biochemistry Department Microbial Genetics - Genetics Department The book is typically used in a one-semester course that may be taught in the fall or the spring. However, the book contains sufficient information so that it could be used for a full year course. It is appropriate for juniors and seniors or first year graduate students.

Updated to reflect the newest changes in genetics, Thompson & Thompson's Genetics in Medicine returns as one of the most favored texts in this fascinating and rapidly evolving field. By integrating the classic principles of human genetics with modern molecular genetics, this medical reference book utilizes a variety of learning tools to help you understand a wide range of genetic disorders. Acquire the state-of-the-art knowledge you need on the latest advances in molecular diagnostics, the Human Genome Project, pharmacogenetics, and bio-informatics. Better understand the relationship between basic genetics and clinical medicine with a variety of clinical case studies. Recognize a wide range of genetic disorders with visual guidance from more than 240 dynamic illustrations and high-quality photos.

Successfully fighting cancer starts with understanding how it begins. This thoroughly revised 3rd Edition explores the scientific basis for our current understanding of malignant transformation and the pathogenesis and treatment of cancer. A team of leading experts thoroughly explain the molecular biologic principles that underlie the diagnostic tests and therapeutic interventions now being used in clinical trials and practice. Incorporating cutting-edge advances and the newest research, the book provides thorough descriptions of everything from molecular abnormalities in common cancers to new approaches for cancer therapy. Features sweeping updates throughout, including molecular targets for the development of anti-cancer drugs, gene therapy, and vaccines...keeping you on the cutting edge of your specialty. Offers a new, more user-friendly full-color format so the information that you need is easier to find. Presents abundant figures-all redrawn in full color-illustrating major concepts for easier comprehension. Features numerous descriptions of the latest clinical strategies-helping you to understand and take advantage of today’s state-of-the-art biotechnology advances.

The emphasis of this book is on those aspects of medical genetics most useful in a modern clinical practice. Clinical aspects of molecular genetics research have been incorporated throughout the spectrum of genetically determined diseases.

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.

Thoroughly updated and in a new two-color format, this well- respected text presents the fundamentals of biochemistry and related topics to students pursuing a one- or two-semester course in pre-med biochemistry or medical programs. The second edition is equally applicable to other health-related fields such as clinical chemistry, medical technology or pharmacology. Medical Biochemistry, Fourth Edition, focuses on the foundations and clinically relevant applications of normal human biochemistry and pathology. Abundantly illustrated with four-color plates. Revised chapters on molecular biology reflect the latest research in the field Two color throughout with four color plates Reference quality appendices include practical information on clinical lab parameters used to diagnose a range of diseases

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 1,0000 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

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.

The fourth edition of this classical reference book can once again be relied upon to present a cohesive and up-to-date exposition of all aspects of human and medical genetics. Human genetics has become one of the main basic sciences in medicine, and molecular genetics is increasingly becoming a major part of this field. This new edition integrates a wealth of new information - mainly describing the influence of the "molecular revolution" - including the principles of epigenetic processes which together create the phenotype of a human being. Other revisions are an improved layout, sub-division into a larger number of chapters, as well as two-colour print throughout for ease of reference, and many of the figures are now in full colour. For graduates and those already working in medical genetics.

Today's medical student needs to understand the principles of genetics rather than accumulate detailed facts. This text explains the essential themes of medical genetics whilst remaining in control of the developments in this subject.

Medical Genetics at a Glance covers the core scientificprinciples necessary for an understanding of medical genetics andits clinical applications, while also considering the socialimplications of genetic disorders. This third edition has been fully updated to include the latestdevelopments in the field, covering the most common geneticanomalies, their diagnosis and management, in clear, concise andrevision-friendly sections to complement any health sciencecourse. Medical Genetics at a Glance now has a completely revisedstructure, to make its content even more accessible. Other featuresinclude: • Three new chapters on Gene Identification, The Biologyof Cancer, and Genomic Approaches to Cancer • A much extended treatment of BiochemicalGenetics • A completely revised chapter on The Cell Cycle,explaining principles of biochemistry and genetics which arefundamental to understanding cancer causation • Two new chapters on Cardiac DevelopmentalPathology • An extended Case Studies section Providing a broad understanding of one of the most rapidlyprogressing topics in medicine, Medical Genetics at a Glanceis perfect for students of medicine, molecular biology, geneticsand genetic counselling, and is a previous winner of a BMAAward.

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.

Advances in cytogenetics continue to crop up in wonderful ways, and we know exponentially more about chromosomes now than mere decades ago. Likewise, the necessary skills in offering genetic counseling continue to evolve. This new edition of Chromosome Abnormalities in Genetic Counseling offers a practical, up-to-date guide for the genetic counselor to marshal cytogenetic data and analysis clearly and effectively to families.

An ethologist shows man to be a gene machine whose world is one of savage competition and deceit

This book provides an introduction to human cytogenetics. It is also suitable for use as a text in a general cytogenetics course, since the basic features of chromosome structure and behavior are shared by all eukar yotes. Because my own background includes plant and animal cytoge netics, many of the examples are taken from organisms other than man. Since the book is written from a cytogeneticist's point of view, human syndromes are described only as illustrations of the effects of abnormal chromosome constitutions on the phenotype. The selection of the phe nomena to be discussed and of the photographs to illustrate them is, in many cases, subjective and arbitrary and is naturally influenced by my interests and the work done in our laboratory. The approach to citations is the exact opposite of that usually used in scientific papers. Whenever possible, the latest and/or most comprehen sive review has been cited, instead of the original publication. Thus the reader is encouraged to delve deeper into any question of interest to him or her. I am greatly indebted to many colleagues for suggestions and criticism. However, my special thanks are due to Dr. JAMES F. CROW, Dr. TRAUTE M. SCHROEDER, and Dr. CARTER DENNISTON for their courage in reading the entire manuscript. I wish to express my gratitude also to the cytogeneticists and editors who have generously permitted the use of published and unpublished photographs.

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.

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, 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.

Human genetics has blossomed from an obscure branch of biological science and occasional explanation for exceedingly rare disorders to a field all of its own that affects everyone. Human Genetics: The Basics introduces the key questions and issues in this emerging field, including: The common ancestry of all humanity The role of genes in sickness and health Debates over the use of genetic technology Written in an engaging, narrative manner, this concise introduction is an ideal starting point for anyone who wants to know more about genes, DNA, and the genetic ties that bind us all.

This is the second edition of a widely used textbook that consolidates the basic concepts of the cancer gene theory and provides a framework for understanding the genetic basis of cancer. Particular attention is devoted to the origins of the mutations that cause cancer, and the application of evolutionary theory to explain how the cell clones that harbor cancer genes tend to expand. Focused on the altered genes and pathways that cause the growth of the most common tumors, Principles of Cancer Genetics is aimed at advanced undergraduates who have completed introductory coursework in genetics, biology and biochemistry, medical students and medical house staff. For students with a general interest in cancer, this book provides a highly accessible and readable overview. For more advanced students contemplating future study in the field of oncology and cancer research, this concise book will be useful as a primer.

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.

An Introduction to Human Molecular Genetics Second Edition Jack J. Pasternak The Second Edition of this internationally acclaimed text expandsits coverage of the molecular genetics of inherited human diseaseswith the latest research findings and discoveries. Using a unique,systems-based approach, the text offers readers a thoroughexplanation of the gene discovery process and how defective genesare linked to inherited disease states in major organ and tissuesystems. All the latest developments in functional genomics,proteomics, and microarray technology have been thoroughlyincorporated into the text. The first part of the text introduces readers to the fundamentalsof cytogenetics and Mendelian genetics. Next, techniques andstrategies for gene manipulation, mapping, and isolation areexamined. Readers will particularly appreciate the text'sexceptionally thorough and clear explanation of genetic mapping.The final part features unique coverage of the molecular geneticsof distinct biological systems, covering muscle, neurological, eye,cancer, and mitochondrial disorders. Throughout the text, helpfulfigures and diagrams illustrate and clarify complex material. Readers familiar with the first edition will recognize the text'ssame lucid and engaging style, and will find a wealth of new andexpanded material that brings them fully up to date with a currentunderstanding of the field, including: * New chapters on complex genetic disorders, genomic imprinting,and human population genetics * Expanded and fully revised section on clinical genetics, coveringdiagnostic testing, molecular screening, and varioustreatments This text is targeted at upper-level undergraduate students,graduate students, and medical students. It is also an excellentreference for researchers and physicians who need a clinicallyrelevant reference for the molecular genetics of inherited humandiseases.

Biotechnology, Second Edition approaches modern biotechnology from a molecular basis, which has grown out of increasing biochemical understanding of genetics and physiology. Using straightforward, less-technical jargon, Clark and Pazdernik introduce each chapter with basic concepts that develop into more specific and detailed applications. This up-to-date text covers a wide realm of topics including forensics, bioethics, and nanobiotechnology using colorful illustrations and concise applications. In addition, the book integrates recent, relevant primary research articles for each chapter, which are presented on an accompanying website. The articles demonstrate key concepts or applications of the concepts presented in the chapter, which allows the reader to see how the foundational knowledge in this textbook bridges into primary research. This book helps readers understand what molecular biotechnology actually is as a scientific discipline, how research in this area is conducted, and how this technology may impact the future. Up-to-date text focuses on modern biotechnology with a molecular foundation Includes clear, color illustrations of key topics and concept Features clearly written without overly technical jargon or complicated examples Provides a comprehensive supplements package with an easy-to-use study guide, full primary research articles that demonstrate how research is conducted, and instructor-only resources

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.

As the molecular basis of human disease becomes better characterized, and the implications for understanding the molecular basis of disease becomes realized through improved diagnostics and treatment, Molecular Pathology, Second Edition stands out as the most comprehensive textbook where molecular mechanisms represent the focus. It is uniquely concerned with the molecular basis of major human diseases and disease processes, presented in the context of traditional pathology, with implications for translational molecular medicine. The Second Edition of Molecular Pathology has been thoroughly

updated to reflect seven years of exponential changes in the fields of genetics, molecular, and cell biology which molecular pathology translates in the practice of molecular medicine. The textbook is intended to serve as a multi-use textbook that would be appropriate as a classroom teaching tool for biomedical graduate students, medical students, allied health students, and others (such as advanced undergraduates). Further, this textbook will be valuable for pathology residents and other postdoctoral fellows that desire to advance their understanding of molecular mechanisms of disease beyond what they learned in medical/graduate school. In addition, this textbook is useful as a reference book for practicing basic scientists and physician scientists that perform disease-related basic science and translational research, who require a ready information resource on the molecular basis of various human diseases and disease states. Explores the principles and practice of molecular pathology: molecular pathogenesis, molecular mechanisms of disease, and how the molecular pathogenesis of disease parallels the evolution of the disease Explains the practice of “molecular medicine and the translational aspects of molecular pathology Teaches from the perspective of “integrative systems biology Enhanced digital version included with purchase

This book identifies and analyzes the genetic basis of bone disorders in humans and demonstrates the utility of mouse models in furthering the knowledge of mechanisms and evaluations of treatments. The book is aimed at all students of bone biology and genetics, and with this in mind, it includes general introductory chapters on genetics and bone biology and more specific disease-orientated chapters, which comprehensively summarize the clinical, genetic, molecular genetic, animal model, functional and molecular pathology, diagnostic, counselling and treatment aspects of each disorder. Saves academic, medical, and pharma researchers time in quickly accessing the very latest details on a broad range of genetic bone issues, as opposed to searching through thousands of journal articles. Provides a common language for bone biologists and geneticists to discuss the development of bone cells and genetics and their interactions in the development of disease Researchers in all areas bone biology and genetics will gain insight into how clinical observations and practices can feed back into the research cycle and will, therefore, be able to develop more targeted genomic and proteomic assays For those clinical researchers who are also MDs, correct diagnosis (and therefore correct treatment) of bone diseases depends on a strong understanding of the molecular basis for the disease.

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

This manual is an indispensable tool for introducing advanced undergraduates and beginning graduate students to the techniques of recombinant DNA technology, or gene cloning and expression. The techniques used in basic research and biotechnology laboratories are covered in detail. Students gain hands-on experience from start to finish in subcloning a gene into an expression vector, through purification of the recombinant protein. The third edition has been completely re-written, with new laboratory exercises and all new illustrations and text, designed for a typical 15-week semester, rather than a 4-week intensive course. The "project" approach to experiments was maintained: students still follow a cloning project through to completion, culminating in the purification of recombinant protein. It takes advantage of the enhanced green fluorescent protein - students can actually visualize positive clones following IPTG induction. Cover basic concepts and techniques used in molecular biology research labs Student-tested labs proven successful in a real classroom laboratories Exercises simulate a cloning project that would be performed in a real research lab "Project" approach to experiments gives students an overview of the entire process Prep-list appendix contains necessary recipes and catalog numbers, providing staff with detailed instructions

The fifth edition of this highly successful book provides students with an essential introduction to the molecular genetics of bacteria covering the basic concepts and the latest developments. It is comprehensive, easy to use and well structured with clear two-colour diagrams throughout. Specific changes to the new edition include: More detail on sigma factors, anti-sigma factors and anti-anti sigma factors, and the difference in the frequency of sigma factors in bacteria Expand material on integrons as these are becoming increasingly important in antibiotic resistance Enhanced treatment of molecular phylogeny Complete revision and updating of the final chapter on ‘Gene Mapping and Genomics’ Two-colour illustrations throughout. The focus of the book remains firmly on bacteria and will be invaluable to students studying microbiology, biotechnology, molecular biology, biochemistry, genetics and related biomedical sciences.

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

New Clinical Genetics features a unique integrated case-based approach which ties the science to real-life clinical scenarios to aid understanding. The 4th edition maintains this approach and is completely updated to reflect new science, new techniques and new ways of thinking in this fast-moving field.

Rabies is the most current and comprehensive account of one of the oldest diseases known that remains a significant public health threat despite the efforts of many who have endeavored to control it in wildlife and domestic animals. During the past five years since publication of the first edition there have been new developments in many areas on the rabies landscape. This edition takes on a more global perspective with many new authors offering fresh outlooks on each topic. Clinical features of rabies in humans and animals are discussed as well as basic science aspects, molecular biology, pathology, and pathogenesis of this disease. Current methods used in defining geographic origins and animal species infected in wildlife are presented, along with diagnostic methods for identifying the strain of virus based on its genomic sequence and antigenic structure. This multidisciplinary account is essential for clinicians as well as public health advisors, epidemiologists, wildlife biologists, and research scientists wanting to know more about the virus and the disease it causes. * Offers a unique global perspective on rabies where dog rabies is responsible for killing more people than yellow fever, dengue fever, or Japanese encephalitis * More than 7 million people are potentially exposed to the virus annually and about 50,000 people, half of them children, die of rabies each year * New edition includes greatly expanded coverage of bat rabies which is now the most prominent source of human rabies in the New World and Western Europe, where dog rabies has been controlled * Recent successes of controlling wildlife rabies with an emphasis on prevention is discussed * Approximately 40% updated material incorporates recent knowledge on new approaches to therapy of human rabies as well as issues involving organ and tissue transplantation * Includes an increase in illustrations to more accurately represent this diseases’ unique horror