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GIANCARLO KAEL

The Gene
HarperCollins Publishers
“... an excellent book... achieves all of its goals with style, clarity and completeness. .. You can see the power and possibilities of molecular genetics as you read...” –Human Genetics "This volume hits an outstanding balance among readability, coverage, and detail." –Biochemistry and Molecular Biology Education Rapid advances in a collection of techniques referred to as gene technology, genetic engineering, recombinant DNA technology and gene cloning have pushed molecular biology to the forefront of the biological sciences. This new edition of a concise, well-written textbook introduces key

techniques and concepts involved in cloning genes and in studying their expression and variation. The book opens with a brief review of the basic concepts of molecular biology, before moving on to describe the key molecular methods and how they fit together. This ranges from the cloning and study of individual genes to the sequencing of whole genomes, and the analysis of genome-wide information. Finally, the book moves on to consider some of the applications of these techniques, in biotechnology, medicine and agriculture, as well as in research that is causing the current explosion of knowledge across the biological sciences. From Genes to Genomes: Concepts and Applications of DNA Technology, Second Edition includes full two-colour design throughout. Specific changes for the new edition include: Strengthening of gene to genome theme Updating and reinforcing of material on proteomics, gene therapy and stem cells More eukaryotic/mammalian examples and less focus on bacteria This textbook is must-have for all undergraduates studying intermediate molecular genetics within the biological and biomedical

sciences. It is also of interest for researchers and all those needing to update their knowledge of this rapidly moving field. *The Selfish Gene* John Wiley & Sons What causes psychiatric disorders to appear? Are they primarily the result of people's environments, or of their genes? Increasingly, we are told that research has confirmed the importance of genetic influences on schizophrenia, depression, bipolar disord. The Gene Business Academic Press Detective James North is called upon to deal with a young, mentally unstable man holding a child hostage at New York's Metropolitan Museum of Art. When he arrives, he is disturbed to discover that - although the bad guy is a complete stranger - he's been asking for North by name. The hostage situation goes wrong, and North finds himself injected with a substance that causes hallucinatory nightmares and flashes of memory that are not his own. He begins to hunt through New York for his attacker, a man he feels inexplicably compelled to kill - a man called Gene. As he does so, North unlocks the secret of his past, a past that stretches back over 3000 years. GENE is the story of forgotten Greek warrior Cyclades who

fought and died in the Trojan Wars, and was fated by the gods to be reincarnated seven times. Locked in a cycle of battle with the Babylonian Magi Athanatos, Cyclades must once again strive to defeat him and thwart his quest to achieve immortality. Cyclades and Athanatos. North and Gene. But in this incarnation, neither man knows which is which, or why each of them has the instinctive need to kill the other.

From Genes to Clones Simon and Schuster

In 2018, the first genetically modified children were born. Now we have the tools to reshape the future of our species. With a pair of genetic scissors known as CRISPR, we can select the traits of our children, avoid ageing, or cure disease. With that ability comes new risks, forcing us to face hard ethical questions. Torill Kornfeldt has travelled the world to meet the people driving this research forward. She has visited fertility clinics in South Korea, oncologists in China who are experimenting on sick patients, and biohackers in the US who want to make the new technology available to everyone. In The Unnatural Selection of Our Species, she asks: How can we handle these new tools that

could change our genetic material? 'Well written, knowledgeable, and engaging – exactly how really good popular science is supposed to be' Gustav Källstrand, Nobel Centre Torill Kornfeldt is a Swedish science journalist with a background in biology. She has worked in the science department of Sweden's leading morning newspaper Dagens Nyheter and at the science branch of the Swedish public radio. There she created the successful radio show Tekniksafari (Tech Safari) on new technology changing society. Her main focus is on how emerging bioengineering and technology will shape our future.

The Laws of Medicine John Wiley & Sons Recent efforts to characterize genetic variation in the human genome, coupled with the rapidly developing field of genomics, have lead directly to the development of new and innovative approaches to the identification of genes contributing to complex human diseases. In Disease Gene Identification: Methods and Protocols, expert researchers in the field provide up-to-date molecular methodologies used in the process of identifying a disease gene, from the initial

stage of study design to the next stage of preliminary locus identification, and ending with stages involved in target characterization and validation. As a volume in the highly successful Methods in Molecular BiologyTM series, chapters contain brief introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and detailed tips on troubleshooting and avoiding known pitfalls. Authoritative and essential, Disease Gene Identification: Methods and Protocols seeks to aid scientists striving toward the identification and characterization of the many disease-related genes, which may someday pave the way for more accurate and improved methods of disease diagnosis as well as vital strategies for disease treatment and prevention. **Gene Jockeys** Jones & Bartlett Learning This third edition of a successful textbook is a concise description of the structure and function of genes. Lewin's Essential GENES Simon and Schuster This book provides readers with new paradigms on the mutation discovery in the post-genome era. The completion of

human and other genome sequencing, along with other new technologies, such as mutation analysis and microarray, has dramatically accelerated the progress in positional cloning of genes from mutated models. In 2002, the Mouse Genome Sequencing Consortium stated that “The availability of an annotated mouse genome sequence now provides the most efficient tool yet in the gene hunter's toolkit. One can move directly from genetic mapping to identification of candidate genes, and the experimental process is reduced to PCR amplification and sequencing of exons and other conserved elements in the candidate interval. With this streamlined protocol, it is anticipated that many decades-old mouse mutants will be understood precisely at the DNA level in the near future.” The implication of such a statement should be similar to the identification of mutated genes from human diseases and animal models, when genome sequencing is completed for them. More than five years have passed, but genes in many human diseases and animal models have not yet been identified. In

some cases, the identification of the mutated genes has been a bottleneck, because the genetic mechanism holds the key to understand the basis of the diseases. However, an integrative strategy, which is a combination of genetic mapping, genome resources, bioinformatics tools, and high throughput technologies, has been developed and tested. The classic paradigm of positional cloning has evolved with completely new concepts of genomic cloning and protocols. This book describes new concepts of gene discovery in the post-genome era and the use of streamlined protocols to identify genes of interest. This book helps identify not only large insertions/deletions but also single nucleotide mutations or polymorphisms that regulate quantitative trait loci (QTL).

The Family Gene Oxford University Press

Known world-wide as the standard introductory text to this important and exciting area, the seventh edition of Gene Cloning and DNA Analysis addresses new and growing areas of research whilst retaining the philosophy of the previous editions. Assuming the reader has little prior knowledge of the subject, its

importance, the principles of the techniques used and their applications are all carefully laid out, with over 250 clearly presented four-colour illustrations. In addition to a number of informative changes to the text throughout the book, the chapters on DNA sequencing and genome studies have been rewritten to reflect the continuing rapid developments in this area of DNA analysis: In depth description of the next generation sequencing methods and descriptions of their applications in studying genomes and transcriptome s New material on the use of ChiP-seq to locate protein-binding sites Extended coverage of the strategies used to assemble genome sequences Description of how the Neanderthal genome has been sequenced and what that sequence tells us about interbreeding between Neanderthals and Homo sapiens Gene Cloning and DNA Analysis remains an essential introductory text to a wide range of biological sciences students; including genetics and genomics, molecular biology, biochemistry, immunology and applied biology. It is also a perfect introductory text for any professional needing to learn the

basics of the subject. All libraries in universities where medical, life and biological sciences are studied and taught should have copies available on their shelves. The Selfish Gene Simon and Schuster The genotype/phenotype dichotomy is being slowly replaced by a more complex relationship whereby the majority of phenotypes arise from interactions between one's genotype and the environment in which one lives. Interestingly, it seems that not only our lives, but also our ancestors' lives, determine how we look. This newly recognized form of inheritance is known as (epi)genetic, as it involves an additional layer of information on top of the one encoded by the genes. Its discovery has constituted one of the biggest paradigm shifts in biology in recent years. Understanding epigenetic factors may help explain the pathogenesis of several complex human diseases (such as diabetes, obesity and cancer) and provide alternative paths for disease prevention, management and therapy. This book introduces the reader to the importance of the environment for our own health and the health of our descendants, sheds light on the current

knowledge on epigenetic inheritance and opens a window to future developments in the field.

Genes 7

Springer Science & Business Media

Gene regulation is an essential process in the development and maintenance of a healthy body, and as such, is a central focus in both basic science and medical research. Gene Regulation, Fifth Edition provides the student and researcher with a clear, up-to-date description of gene regulation in eukaryotes, distilling the vast and complex primary literature into a concise overview.

Reconceiving the Gene

Simon and Schuster

Since the Russian edition of this book was published in 1975 many new research works have appeared which have made necessary some additions for the English edition, to reflect progress in molecular developmental genetics. Recent important findings in this field have brought about essential corrections to the concept of genetic regulation of the process of cell differentiation. The discovery of the mosaic structure of a gene prompted the re evaluation of our considerations about the regulation of gene activity

in eukaryotes, and the data about transcriptional events during ontogenesis are of great importance as well. Formerly it was generally accepted that a derepression of genes was responsible for cell differentiation in the process of develop ment. Recently three important conclusions have been derived (Davidson and Britten, 1979) which help to pose the problem in a new way: 1) Only a small part of single copy sequences of DNA is represented in nuclear RNA of a given type of cell or tissue: 10% to 20% in sea urchin embryos, 11 % in rat liver, 4% to 6% in Drosophila cell culture, etc. Since only about 10% of single copy sequences represent the structural genes (Davidson and Britten, 1973), transcription of almost the whole set of structural genes occurs.

Gene Cloning and DNA Analysis Oxford University Press

Ever since the birth of molecular biology, the tantalizing possibility of treating disease at its genetic roots has become increasingly feasible. Gene therapy — though still in its infancy — remains one of the hottest areas of research in medicine. Its approach utilizes a gene transfer vehicle ('vector') to deliver therapeutic DNA or RNA to

cells of the body in order to rectify the defect that is causing the disease. Successful therapies have been reported in humans in recent years such as cures in boys with severe immune deficiencies. Moreover, gene therapy strategies are being adapted in numerous biomedical laboratories to obtain novel treatments for a variety of diseases and to study basic biological aspects of disease. Correction of disease in animal studies, is steadily gaining ground, highlighting the immense potential of gene therapy in the medical profession.Thi s book will cover topics that are at the forefront of biomedical research such as RNA interference, viral and non-viral gene transfer systems, treatment of hematological diseases and disorders of the central nervous system. Leading experts on the respective vector or disease will contribute the individual chapters and explain cutting-edge technologies. It also gives a broad overview of the most important gene transfer vectors and most extensively studied target diseases. This comprehensiv e guide is therefore a must-read for anyone in the biotechnology, biomedical or medical industries seeking to

further their knowledge in the area of human gene therapy.

What's in Your Genes?

World Scientific Essential, required reading for doctors and patients alike: A Pulitzer Prize-winning author and one of the world's premiere cancer researchers reveals an urgent philosophy on the little-known principles that govern medicine—and how understanding these principles can empower us all. Over a decade ago, when Siddhartha Mukherjee was a young, exhausted, and isolated medical resident, he discovered a book that would forever change the way he understood the medical profession. The book, The Youngest Science, forced Dr. Mukherjee to ask himself an urgent, fundamental question: Is medicine a "science"? Sciences must have laws—statements of truth based on repeated experiments that describe some universal attribute of nature. But does medicine have laws like other sciences? Dr. Mukherjee has spent his career pondering this question—a question that would ultimately produce some of most serious thinking he would do around the tenets of his discipline—cul

minating in The Laws of Medicine. In this important treatise, he investigates the most perplexing and illuminating cases of his career that ultimately led him to identify the three key principles that govern medicine. Brimming with fascinating historical details and modern medical wonders, this important book is a fascinating glimpse into the struggles and Eureka! moments that people outside of the medical profession rarely see. Written with Dr. Mukherjee's signature eloquence and passionate prose, The Laws of Medicine is a critical read, not just for those in the medical profession, but for everyone who is moved to better understand how their health and well-being is being treated. Ultimately, this book lays the groundwork for a new way of understanding medicine, now and into the future.

Gene

Cambridge University Press

Genes VII gives an integrated and authoritative account of the structure and function of genes. It is thoroughly up to date with the latest research and thinking in the field. Successive editions have provided an integrated account of the whole field of modern molecular genetics and

thisedition continues that approach, providing a new synthesis and continuing the greater emphasis on how genes function in their biological context. In a change to all previous editions, which started with a traditional analysis of formal genetics, this seventh edition has been organised to present thesubject in the context of the eukaryotic gene as revealed in the last decade, an analysis based directly on the molecular properties of the gene itself.From the Preface: "The thesis of Genes is that only by understanding the structure and function of the gene itself will we be able in turn to understand the operation of the genome as a whole. Although the emphasis has shifted to the characterization of eukaryotic genes, and therefore to theiranalysis by the direct techniques of molecular biology rather than the subtlety of genetics, the classical approach remains intellectually penetrating. It remains an aim of this book to integrate both approaches in the context of a unified approach to prokaryotes and eukaryotes."

The Gene

Univ of California Press

A compelling behind-the-scenes look at cutting-edge scientific inquiry, as

well as a brilliant examination of the ramifications of genetic research, The Science of Desire is a lasting resource in the increasingly significant debate over the role that genetics plays in our lives. In July 1993, a scientific event made front-page news: the discovery that genetics plays a significant role in determining homosexuality. In The Science of Desire, Dean Hamer—the scientist behind the groundbreaking study—tells the inside story of how the discovery was made and what it means, not only for our understanding of sexuality, but for human behavior in general. In this accessible and remarkably clear book, Dean Hamer expands on the account of his history-making research to explore the scientific, social, and ethical issues raised by his findings. Dr. Hamer addresses such tough questions as whether it would be possible or ethical to test in utero for the gay gene; whether genetic manipulation could or should be used to alter a person's sexuality; and how a gay gene could have survived evolution. A compelling behind-the-scenes look at cutting-edge scientific inquiry, as well as a brilliant examination

of the ramifications of genetic research, The Science of Desire is a lasting resource in the increasingly significant debate over the role that genetics plays in our lives.

Gene Environment Interactions

Algora Publishing

In Life Beyond the Gene, Steven Rose confronts the ideology of reductionism and ultra-Darwinism, with its insistence that all aspects of human life from sexual preference to infanticide, political orientation to violence, male domination to alcoholism, are in our genes and are the inevitable consequences of natural selection. These claims, Rose asserts, are not only socially naive, but fundamentally misunderstand the active and irreducible nature of living processes. Rose argues that life depends on the elaborate web of interactions that occur within cells, organisms, and ecosystems, in which DNA has one part to play. From early in their development, living organisms have to be capable of quasi-independent existence while growing to maturity. If we are to understand life, we must recapture an understanding of the entire living organism and its trajectory through time and space. Rose calls

these trajectories lifelines. Provocative and incisive, Life Beyond the Gene provides a compelling response to those enthusiasts of the gene who would deny the complexity of life.

Gene Interactions in Development Lindhardt og Ringhof

The new edition of Lewin's Essential GENES is the most accessible, student-friendly text of its kind! Completely revised and rewritten, the Second Edition continues to provide students with the latest findings in the field of molecular biology and molecular genetics. An exceptional new pedagogy enhances student learning and helps readers understand and retain key material like never before. New Concept and Reasoning Checks at the end of each chapter section, End of Chapter Questions and Further Readings for each chapter, and several categories of special topics boxes within each chapter expand and reinforce important concepts. The reorganization of topics in this edition allows students to focus more sharply on the key material at hand and improves the natural flow of course material. New end-of-chapter questions reviews major points in the chapter and allow students

to test themselves on important course material.

The Century of the Gene
Archway Publishing

In The Selfish Gene, Richard Dawkins crystallized the gene's eye view of evolution developed by W.D. Hamilton and others. The book provoked widespread and heated debate. Written in part as a response, The Extended Phenotype gave a deeper clarification of the central concept of the gene as the unit of selection; but it did much more besides. In it, Dawkins extended the gene's eye view to argue that the genes that sit within an organism have an influence that reaches out beyond the visible traits in that body - the phenotype - to the wider environment, which can include other individuals. So, for instance, the genes of the beaver drive it to gather twigs to produce the substantial physical structure of a dam; and the genes of the cuckoo chick produce effects that manipulate the behaviour of the host bird, making it nurture the intruder as one of its own. This notion of the extended phenotype has proved to be highly influential in the way we understand evolution and the natural world. It represents a key scientific contribution to evolutionary biology, and it continues to play an

important role in research in the life sciences. The Extended Phenotype is a conceptually deep book that forms important reading for biologists and students. But Dawkins' clear exposition is accessible to all who are prepared to put in a little effort. Oxford Landmark Science books are 'must-read' classics of modern science writing which have crystallized big ideas, and shaped the way we think.

The Extended Phenotype

Simon and Schuster

The #1 NEW YORK TIMES Bestseller The basis for the PBS Ken Burns Documentary The Gene: An Intimate History Now includes an excerpt from Siddhartha Mukherjee’s new book Song of the Cell! From the Pulitzer Prize–winning author of The Emperor of All Maladies—a fascinating history of the gene and “a magisterial account of how human minds have laboriously, ingeniously picked apart what makes us tick” (Elle). “Sid Mukherjee has the uncanny ability to bring together science, history, and the future in a way that is understandable and riveting, guiding us through both time and the mystery of life itself.” —Ken Burns “Dr. Siddhartha Mukherjee dazzled readers with his Pulitzer Prize-winning The Emperor of All Maladies in 2010. That

achievement was evidently just a warm-up for his virtuoso performance in The Gene: An Intimate History, in which he braids science, history, and memoir into an epic with all the range and biblical thunder of Paradise Lost" (The New York Times). In this biography Mukherjee brings to life the quest to understand human heredity and its surprising influence on our lives, personalities, identities, fates, and choices. "Mukherjee expresses abstract intellectual ideas through emotional stories…[and] swaddles his medical rigor with rhapsodic tenderness, surprising vulnerability, and occasional flashes of pure poetry" (The Washington Post). Throughout, the story of Mukherjee's own family—with its tragic and bewildering history of mental illness—remin ds us of the questions that hang over our ability to translate the science of genetics from the laboratory to the real world. In riveting and dramatic prose, he describes the centuries of research and experimentati on—from Aristotle and Pythagoras to Mendel and Darwin, from Boveri and Morgan to Crick, Watson and Franklin, all the way through the revolutionary twenty-first century innovators

who mapped the human genome. “A fascinating and often sobering history of how humans came to understand the roles of genes in making us who we are—and what our manipulation of those genes might mean for our future” (Milwaukee Journal-Sentinel), The Gene is the revelatory and magisterial history of a scientific idea coming to life, the most crucial science of our time, intimately explained by a master. “The Gene is a book we all should read” (USA TODAY).

The Sports Gene

Scholastic

Get the low-down on genetics with easy-to-understand terms and clear explanations. From interpreting dominant and recessive genes to learning about mutations, this book shows the different factors that can determine a person's DNA.