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Cell Biology E-Book Essential Cell Biology *Medical Cell Biology* **Cell Biology by the Numbers** **Histology and Cell Biology: An Introduction to Pathology E-Book** **Quantitative Imaging in Cell Biology** **Molecular and Cell Biology of Cancer** *Visions of Cell Biology* **Cell Biology Stochastic Processes in Cell Biology** **The Molecular and Cellular Biology of Wound Repair** *Principles of Cell Biology* **The Cell Biology of Sponges** **Karp's Cell Biology Thrive in Cell Biology** **Computational Methods in Cell Biology** **Cells: Molecules and Mechanisms** *Methods in Cell Biology* *Encyclopedia of Cell Biology* *Biochemistry and Cell Biology of Ageing: Part II Clinical Science* *Case Studies in Cell Biology* *The Dictionary of Cell and Molecular Biology* **Yeast** *Molecular and Cellular Biology of Viruses* **Landmark Papers in Cell Biology** **Biochemistry and Cell Biology of Ageing: Part I Biomedical Science** **Molecular Biology of the Cell 6E - The Problems Book** **Methods in Kidney Cell Biology** *Cell Biology* *Introduction to Cell Biology* **Soft Condensed Matter Physics in Molecular and Cell Biology** **Expansion Microscopy for Cell Biology** **Cell Biology by the Numbers** *Centrifugal Separations in Molecular and Cell Biology* **Plant Cell Biology** **Essentials of Stem Cell Biology** **Histology and Cell Biology: An Introduction to Pathology E-Book** **Cell Biology and Translational Medicine, Volume 12** *Computational Cell Biology* **Sertoli Cell Biology**

Case Studies in Cell Biology Feb 08 2021 *Case Studies in Cell Biology* presents real world scenarios to help readers use science process and reasoning skills. The case studies require application and analyzation of concepts beyond rote memory of biological concepts. The book is based on the student learning outcomes from the American Society for Cell Biology, offering practical application for both the classroom and research laboratory. Guides the reader in applying knowledge directly to real world scenarios Includes case studies to bridge foundational cell biological concepts to translational science Aids students in synthesizing information and applying science processes
Centrifugal Separations in Molecular and Cell Biology Dec 29 2019 *Centrifugal Separations in Molecular and Cell Biology* focuses on the application of modern centrifugation technology in molecular and cell biology, including the separation and fractionation of biological particles by centrifugation on the preparative and analytical scales. The selection first covers the principles and practices of centrifugation and the bases of centrifugal separations. Discussions focus on the basic concepts of sedimentation theory, centrifugation methods, designing centrifugation experiments, care of centrifuges and rotors, and statistical estimation of molecular parameters. The book also ponders on the practical aspects of rate-zonal centrifugation, including gradient materials, density and viscosity of glycerol solutions, and resolution and gradient shape. The publication examines fractionations in zonal rotors and the quantitative aspects of rate-zonal centrifugation. The text then reviews isopycnic centrifugation in ionic media and analytical centrifugation. Topics include separation by isopycnic banding, large-scale preparative procedures, and density-gradient solutes. The selection is a valuable reference for readers interested in centrifugation technology.

Karp's Cell Biology Sep 17 2021 *Karp's Cell Biology, Global Edition* continues to build on its strength at connecting key concepts to the experiments that reveal how we know what we know in the world of Cell Biology. This classic text explores core concepts in considerable depth, often adding experimental detail. It is written in an inviting style to assist students in handling the plethora of details encountered in the Cell Biology course. In this edition, two new co-authors take the helm and help to expand upon the hallmark strengths of the book, improving the student learning experience.

The Cell Biology of Sponges Oct 19 2021 Modern biology owes much to the study of favorable model systems which facilitate the realization of critical experiments and results in the introduction of new concepts. Examples of such systems are numerous and studies of them are regularly recognized by the scientific community. The 1983 Nobel Prize in Medicine and Physiology is a magnificent example in which com plants served as the experimental model. In a manner somewhat more modest, other biological systems have attracted recognition due to their critical phylogenetic position, or indeed because of their uniqueness which distinguishes them from all other organisms. Assuredly, among the whole assemblage of living organisms, sponges stand out as worthy of interest by scientists: they are simultaneously models, an important group in evolution, and animals unlike others. As early as the beginning of this century, sponges appeared as exceptional models for the study of phenomena of cell recognition. Innumerable works have been dedicated to understanding the mechanisms which assure the reaggregation of dissociated cells and the reconstitution of a functional individual. Today, research on these phenomena is at the ultimate, molecular level. Through an assemblage of characteristics the sponges are, based upon all available evidence, the most primitive Metazoans. Their tissues-perhaps one can say their cell groups-are loosely assembled (they possess no tight or gap junctions), cell differentiation appears highly labile, and they do not develop any true organs. But, they are most certainly Metazoans.

Cell Biology E-Book Oct 31 2022 The much-anticipated 3rd edition of *Cell Biology* delivers comprehensive, clearly written, and richly illustrated content to today's students, all in a user-friendly format. Relevant to both research and clinical practice, this rich resource covers key principles of cellular function and uses them to explain how molecular defects lead to cellular dysfunction and cause human disease. Concise text and visually amazing graphics simplify complex information and help readers make the most of their study time. Clearly written format incorporates rich illustrations, diagrams, and charts. Uses real examples to illustrate key cell biology concepts. Includes beneficial cell physiology coverage. Clinically oriented text relates cell biology to pathophysiology and medicine. Takes a mechanistic approach to molecular processes. Major new didactic chapter flow leads with the latest on genome organization, gene expression and RNA processing. Boasts exciting new content including the evolutionary origin of eukaryotes, super resolution fluorescence microscopy, cryo-electron microscopy, gene editing by CRISPR/Cas9, contributions of high throughput DNA sequencing to understand genome organization and gene expression, microRNAs, lncRNAs, membrane-shaping proteins, organelle-organelle contact sites, microbiota, autophagy, ERAD, motor protein mechanisms, stem cells, and cell cycle regulation. Features specially expanded coverage of genome sequencing and regulation, endocytosis, cancer genomics, the cytoskeleton, DNA damage response, necroptosis, and RNA processing. Includes hundreds of new and updated diagrams and micrographs, plus fifty new protein and RNA structures to explain molecular mechanisms in unprecedented detail.

Computational Methods in Cell Biology Jul 16 2021 Computational methods are playing an ever increasing role in cell biology. This volume of *Methods in Cell Biology* focuses on Computational Methods in Cell Biology and consists of two parts: (1) data extraction and analysis to distill models and mechanisms, and (2) developing and simulating models to make predictions and testable hypotheses. Focuses on computational methods in cell biology Split into 2 parts--data extraction and analysis to distill models and mechanisms, and developing and simulating models to make predictions and testable hypotheses Emphasizes the intimate and necessary connection with interpreting experimental data and proposing the next hypothesis and experiment

Cell Biology by the Numbers Jul 28 2022 A Top 25 CHOICE 2016 Title, and recipient of the CHOICE Outstanding Academic Title (OAT) Award. How much energy is released in ATP hydrolysis? How many mRNAs are in a cell? How genetically similar are two random people? What is faster, transcription or translation? *Cell Biology by the Numbers* explores these questions and dozens of others provided

Cell Biology by the Numbers Jan 28 2020 Very little in our human experience is truly comparable to the immensely crowded and bustling interior of a cell. Biological numeracy provides a new kind of understanding of the cellular world. This book brings together up-to-date quantitative data from the vast biological literature and uses the powerful tool of "back of the envelope" estimates to reveal fresh perspectives and insights from numbers commonly encountered in cell biology. Readers gain a feeling for the sizes, concentrations, energies, and rates that characterize the lives of cells-- thereby shedding new light on the microscopic realm.

Visions of Cell Biology Mar 24 2022 Although modern cell biology is often considered to have arisen following World War II in tandem with certain technological and methodological advances—in particular, the electron microscope and cell fractionation—its origins actually date to the 1830s and the development of cytology, the scientific study of cells. By 1924, with the publication of Edmund Vincent Cowdry's *General Cytology*, the discipline had stretched beyond the bounds of purely microscopic observation to include the chemical, physical, and genetic analysis of cells. Inspired by Cowdry's classic, watershed work, this book collects contributions from cell biologists, historians, and philosophers of science to explore the history and current status of cell biology. Despite extraordinary advances in describing both the structure and function of cells, cell biology tends to be overshadowed by molecular biology, a field that developed contemporaneously. This book remedies that unjust disparity through an investigation of cell biology's evolution and its role in pushing forward the boundaries of biological understanding. Contributors show that modern concepts of cell organization, mechanistic explanations, epigenetics, molecular thinking, and even computational approaches all can be placed on the continuum of cell studies from cytology to cell biology and beyond. The first book in the series *Convening Science: Discovery at the Marine Biological Laboratory*, *Visions of Cell Biology* sheds new light on a century of cellular discovery.

Biochemistry and Cell Biology of Ageing: Part I Biomedical Science Sep 05 2020 This new volume in the *Subcellular Biochemistry* series will focus on the biochemistry and cellular biology of aging processes in human cells. The chapters will be written by experts in their respective fields and will focus on a number of the current key areas of research in subcellular aging research. Main topics for discussion are mitochondrial aging, protein homeostasis and aging and the genetic processes that are involved in aging. There will also be chapters that are dedicated to the study of the roles of a variety of vitamins and minerals on aging and a number of other external factors (microbiological, ROS, inflammation, nutrition). This book will provide the reader with a state of the art overview of the subcellular aging field. This book will be published in cooperation with a second volume that will discuss the translation of the cell biology of aging to a more clinical setting and it is hoped that the combination of these two volumes will bring a deeper understanding of the links between the cell and the body during aging.

Principles of Cell Biology Nov 19 2021 *Principles of Cell Biology, Third Edition* is an educational, eye-opening text with an emphasis on how evolution shapes organisms on the cellular level. Students will learn the material through 14 comprehensible principles, which give context to the underlying theme that make the details fit together.

Soft Condensed Matter Physics in Molecular and Cell Biology Mar 31 2020 Soft condensed matter physics, which emerged as a distinct branch of physics in the 1990s, studies complex fluids: liquids in which structures with length scale between the molecular and the macroscopic exist. Polymers, liquid crystals, surfactant solutions, and colloids fall into this category. Physicists deal with properties of soft matter system

Essential Cell Biology Sep 29 2022 *Essential Cell Biology* provides a readily accessible introduction to the central concepts of cell biology, and its lively, clear writing and exceptional illustrations make it the ideal textbook for a first course in both cell and molecular biology. The text and figures are easy-to-follow, accurate, clear, and engaging for the introductory student. Molecular detail has been kept to a minimum in order to provide the reader with a cohesive conceptual framework for the basic science that underlies our current understanding of all of biology, including the biomedical sciences. The Fourth Edition has been thoroughly revised, and covers the latest developments in this fast-moving field, yet retains the academic level and length of the previous edition. The book is accompanied by a rich package of online student and instructor resources, including over 130 narrated movies, an expanded and updated Question Bank. *Essential Cell Biology, Fourth Edition* is additionally supported by the Garland Science Learning System. This homework platform is designed to evaluate and improve student performance and allows instructors to select assignments on specific topics and review the performance of the entire class, as well as individual students, via the instructor dashboard. Students receive immediate feedback on their mastery of the topics, and will be better prepared for lectures and classroom discussions. The user-friendly system provides a convenient way to engage students while assessing progress. Performance data can be used to tailor classroom discussion, activities, and lectures to address students' needs precisely and efficiently. For more information and sample material, visit <http://garlandscience.rocketmix.com/>.

Plant Cell Biology Nov 27 2019 *Plant Cell Biology, Second Edition: From Astronomy to Zoology* connects the fundamentals of plant anatomy, plant physiology, plant growth and development, plant taxonomy, plant biochemistry, plant molecular biology, and plant cell biology. It covers all aspects of plant cell biology without emphasizing any one plant, organelle, molecule, or technique. Although most examples are biased towards plants, basic similarities between all living eukaryotic cells (animal and plant) are recognized and used to best illustrate cell processes. This is a must-have reference for scientists with a background in plant anatomy, plant physiology, plant growth and development, plant taxonomy, and more. Includes chapter on using mutants and genetic approaches to plant cell biology research and a chapter on -omic technologies Explains the physiological underpinnings of biological processes to bring original insights relating to plants Includes examples throughout from physics, chemistry, geology, and biology to bring understanding on plant cell development, growth, chemistry and diseases Provides the essential tools for students to be able to evaluate and assess the mechanisms involved in cell growth, chromosome motion, membrane trafficking and energy exchange

Molecular Biology of the Cell 6E - The Problems Book Aug 05 2020 *The Problems Book* helps students appreciate the ways in which experiments and simple calculations can lead to an understanding of how cells work by introducing the experimental foundation of cell and molecular biology. Each chapter reviews key terms, tests for understanding basic concepts, and poses research-based problems. *The Problems Book* has been

Thrive in Cell Biology Aug 17 2021 *The Thrive in Bioscience* revision guides are written to help undergraduate students achieve exam success in all core areas of bioscience. They communicate all the key concepts in a succinct, easy-to-digest way, using features and tools - both in the book and in digital form - to make learning even more effective.

Methods in Cell Biology May 14 2021 *Methods in Cell Biology, Volume 158*, the latest release in this series, highlights new advances in the field, with this release covering How to orient cells in micro-cavities for high resolution imaging of cytokinesis and lumen formation, A body-on-a-chip (BOC) system for studying gut-liver interaction, Manipulating cultured mammalian cells for mitosis research, Live-cell FLIM-FRET using a commercially available system, A comparative analysis of methods to measure kinetochore-microtubule attachment stability, A workflow for visualizing human cancer biopsies using large-format electron microscopy, Isolation of stage-specific germ cells using facs in *Drosophila* germlarium, Computational analysis of filament polymerization dynamics in cytoskeletal networks, and more. Provides the authority and expertise of leading contributors from an international board of authors Presents the latest release in the *Methods in Cell Biology* series Updated release includes the latest information in this area of study

Molecular and Cellular Biology of Viruses Nov 07 2020 Viruses interact with host cells in ways that uniquely reveal a great deal about general aspects of molecular and cellular structure and function. *Molecular and Cellular Biology of Viruses* leads students on an exploration of viruses by supporting engaging and interactive learning. All the major classes of viruses are covered, with separate chapters for their replication and expression strategies, and chapters for mechanisms such as attachment that are independent of the virus genome type. Specific cases drawn from primary literature foster student engagement. End-of-chapter questions focus on analysis and interpretation with answers being given at the back of the book. Examples come from the most-studied and medically important viruses such as HIV, influenza, and poliovirus. Plant viruses and bacteriophages are also included. There are chapters on the overall effect of viral infection on the host cell. Coverage of the immune system is focused on the interplay between host defenses and viruses, with a separate chapter on medical applications such as anti-viral drugs and vaccine development. The final chapter is on virus diversity and evolution, incorporating contemporary insights from metagenomic research. Key selling feature: Readable but rigorous coverage of the molecular and cellular biology of viruses Molecular mechanisms of all major groups, including plant viruses and bacteriophages, illustrated by example Host-pathogen interactions at the cellular and molecular level emphasized throughout Medical implications and consequences included Quality illustrations available to instructors Extensive questions and answers for each chapter

Cells: Molecules and Mechanisms Jun 14 2021 "Yet another cell and molecular biology book? At the very least, you would think that if I was going to write a textbook, I should write one in an area that really needs one instead of a subject that already has multiple excellent and definitive books. So, why write this book, then? First, it's a course that I have enjoyed teaching for many years, so I am very familiar with what a student really needs to take away from this class within the time constraints of a semester. Second, because it is a course that many students take, there is a greater opportunity to make an impact on more students' pocketbooks than if I were to start off writing a book for a highly specialized upper-level course. And finally, it was fun to research and write, and can be revised easily for inclusion as part of our next textbook, *High School Biology*." --Open Textbook Library.

Computational Cell Biology Jul 24 2019 This textbook provides an introduction to dynamic modeling in molecular cell biology, taking a computational and intuitive approach. Detailed illustrations, examples, and exercises are included throughout the text. Appendices containing mathematical and computational techniques are provided as a reference tool.

Introduction to Cell Biology May 02 2020 This book is intended to be an accessible introduction to the cell biology of mammalian cells for junior or senior undergraduate students who have already had an introduction to biological sciences. This engaging and stimulating text focuses on current controversies in cell biology. To solve these puzzles, the reader will learn how to answer a number of fundamental yet hard-hitting questions in the field. He or she is thus able to approach the subject with the right scientific attitude and build a firm foundation of understanding. Basic features of mammalian cells ? secretion, division, motility, cell-cell interactions ? are described using up-to-date references to the most current scientific literature. The text is well illustrated with clearly understandable diagrams and numerous micrographs of cells. This text will enable non-specialists to acquire a better understanding of current issues in mammalian cell biology.

The Molecular and Cellular Biology of Wound Repair Dec 21 2021 'Provides comprehensive detail on the various aspects of particular molecules involved in the phases of injury and repair and the cellular movements and processes.... This is an excellent reference book for libraries serving biology and health science clientele and for workers in this field of research.' -American Scientist, from a review of the First Edition All chapters of this second edition have been completely revised and expanded-especially the chapters on growth factors and extracellular matrix molecules. New chapters discuss provisional matrix proteins, extracellular matrix receptors, and scarring versus

nonscarring wound healing.

Stochastic Processes in Cell Biology Jan 22 2022 This book develops the theory of continuous and discrete stochastic processes within the context of cell biology. A wide range of biological topics are covered including normal and anomalous diffusion in complex cellular environments, stochastic ion channels and excitable systems, stochastic calcium signaling, molecular motors, intracellular transport, signal transduction, bacterial chemotaxis, robustness in gene networks, genetic switches and oscillators, cell polarization, polymerization, cellular length control, and branching processes. The book also provides a pedagogical introduction to the theory of stochastic process – Fokker Planck equations, stochastic differential equations, master equations and jump Markov processes, diffusion approximations and the system size expansion, first passage time problems, stochastic hybrid systems, reaction-diffusion equations, exclusion processes, WKB methods, martingales and branching processes, stochastic calculus, and numerical methods. This text is primarily aimed at graduate students and researchers working in mathematical biology and applied mathematicians interested in stochastic modeling. Applied probabilists and theoretical physicists should also find it of interest. It assumes no prior background in statistical physics and introduces concepts in stochastic processes via motivating biological applications. The book is highly illustrated and contains a large number of examples and exercises that further develop the models and ideas in the body of the text. It is based on a course that the author has taught at the University of Utah for many years.

Biochemistry and Cell Biology of Ageing: Part II Clinical Science Mar 12 2021 This volume of the subcellular Biochemistry series will attempt to bridge the gap between the subcellular events that are related to aging as they were described in the first volume of this set of two books and the reality of aging as this is seen in clinical practice. All chapters will start from the biochemistry or cell biology, where the data is available and work up towards the understanding that we have of aging in the various areas that are related to the subject. Key focus points for this volume are nutrition, external factors and genetics on aging. There will also be chapters that will focus on various organs or tissues in which aging has been well studied, like the eyes, the muscles, the immune system and the bones. The aim of the book project and the book project that is published in concert with this volume is to bring the subcellular and clinical areas into closer contact.

Medical Cell Biology Aug 29 2022 Medical Cell Biology, Third Edition, focuses on the scientific aspects of cell biology important to medical students, dental students, veterinary students, and prehealth undergraduates. With its National Board-type questions, this book is specifically designed to prepare students for this exam. The book maintains a concise focus on eukaryotic cell biology as it relates to human and animal disease, all within a manageable 300-page format. This is accomplished by explaining general cell biology principles in the context of organ systems and disease. This updated version contains 60% new material and all new clinical cases. New topics include apoptosis and cell death from a neural perspective; signal transduction as it relates to normal and abnormal heart function; and cell cycle and cell division related to cancer biology. 60% New Material! New Topics include: Apoptosis and cell death from a neural perspective Signal transduction as it relates to normal and abnormal heart function Cell cycle and cell division related to cancer biology All new clinical cases Serves as a prep guide to the National Medical Board Exam with sample board-style questions (using Exam Master(R) technology): www.exammaster.com Focuses on eukaryotic cell biology as it related to human disease, thus making the subject more accessible to pre-med and pre-health students

Sertoli Cell Biology Jun 22 2019 Sertoli Cell Biology, Second Edition summarizes the progress since the last edition and emphasizes the new information available on Sertoli/germ cell interactions. This information is especially timely since the progress in the past few years has been exceptional and it relates to control of sperm production in vivo and in vitro. Fully revised Written by experts in the field Summarizes 10 years of research Contains clear explanations and summaries Provides a summary of references over the last 10 years

Expansion Microscopy for Cell Biology Feb 29 2020 Expansion Microscopy for Cell Biology, Volume 161 in the Methods in Cell Biology series, compiles recent developments in expansion microscopy techniques (Pro-ExM, U-ExM, Ex-STED, X10, Ex-dSTORM, etc.) and their applications in cell biology, ranging from mitosis, centrioles or nuclear pore complex to plant cell, bacteria, Drosophila or neurons. Chapters in this new release include Protein-retention Expansion Microscopy: Improved Sub-cellular Imaging Resolution through Physical Specimen Expansion, Ultrastructure Expansion Microscopy (U-ExM), Expansion STED microscopy (ExSTED), Simple multi-color super-resolution by X10 microscopy, Expansion microscopy imaging of various neuronal structures, Mapping the neuronal cytoskeleton using expansion microscopy, Mechanical expansion microscopy, and much more. Provides the authority and expertise of leading contributors from an international board of authors Represents the latest release in the Methods in Cell Biology series Includes the latest information on Expansion Microscopy for Cell Biology

Quantitative Imaging in Cell Biology May 26 2022 This new volume, number 123, of Methods in Cell Biology looks at methods for quantitative imaging in cell biology. It covers both theoretical and practical aspects of using optical fluorescence microscopy and image analysis techniques for quantitative applications. The introductory chapters cover fundamental concepts and techniques important for obtaining accurate and precise quantitative data from imaging systems. These chapters address how choice of microscope, fluorophores, and digital detector impact the quality of quantitative data, and include step-by-step protocols for capturing and analyzing quantitative images. Common quantitative applications, including co-localization, ratiometric imaging, and counting molecules, are covered in detail. Practical chapters cover topics critical to getting the most out of your imaging system, from microscope maintenance to creating standardized samples for measuring resolution. Later chapters cover recent advances in quantitative imaging techniques, including super-resolution and light sheet microscopy. With cutting-edge material, this comprehensive collection is intended to guide researchers for years to come. Covers sections on model systems and functional studies, imaging-based approaches and emerging studies Chapters are written by experts in the field Cutting-edge material

Cell Biology Feb 20 2022 CELL BIOLOGY The ultimate concise introduction to modern cell biology, now updated Taking an “essentials only” approach, Cell Biology: A Short Course, Third Edition tells the story of cells as the unit of life in a uniquely accessible, student-friendly manner. Completely updated from the previous edition and now in full color, this accessible text features new chapters, a supporting website for students, and online supplemental material including PowerPoint slides for instructors. As in earlier editions, the authors combine their expertise in the areas of cell biology, physiology, biochemistry, and molecular biology to skillfully present key concepts, illustrating them with clear diagrams and numerous examples from current research. Special sections focus on the importance of cell biology in medicine and industry today, with extensive cross-referencing to real-world research and development. In updating this text, the authors have provided such new material as: A chapter on the cell biology of the immune system Discussion of stem cells, cytokine receptors, the cell biology of cancer, and cell division “Medical Relevance” text boxes A family tree of organisms to reinforce cell biology differences among major taxa Online supplemental information for students, including interactive quizzes and animations Also included are a detailed description of intercellular signaling and a chapter devoted to a case study of cystic fibrosis. Review questions are included at the end of each chapter, as well as a full glossary of key words and phrases to help make even the most complex concepts easy to master. Ideally suited for undergraduate cell biology/biology majors, pre-med students, and graduate and medical school courses in cell biology, this Third Edition of Cell Biology is the most integrated introduction available on this fascinating and timely subject Visit the companion website www.wileyshortcourse.com/cellbiology for supplementary material, including animations, video, and useful links and references

Landmark Papers in Cell Biology Oct 07 2020 Annotation Contains 42 seminal papers illustrating advances in cell biology, along with brief commentaries that place the papers in historical and intellectual context. All papers are studies of eukaryotes, and are grouped according to themes of genome organization and replication, transcription, nuclear envelope and nuclear import, mitosis and cell cycle control, cell membrane and extracellular matrix, protein synthesis and membrane traffic, and cytoskeleton. Lacks a subject index. Gall teaches embryology at the Carnegie Institution. McIntosh teaches cell biology at the University of Colorado. Annotation c. Book News, Inc., Portland, OR (booknews.com).

Methods in Kidney Cell Biology Jul 04 2020 Methods in Kidney Cell Biology, Volume 153, represents state-of-the-art techniques in renal research that are ideal for veterans, graduate students, postdoctoral fellows, and clinical scientists and principal investigators. Topics in the new release include Single glomerular proteomics - a novel method in translational glomerular cell biology, Measurement of cytosolic and intracellular calcium in live cells, Differentiation of human kidney organoids from pluripotent stem cells, Quantifying autophagic flux in kidney tissue using structured illumination microscopy, the Generation of primary cells from ADPKD and normal human kidneys, ADPKD cell proliferation and Cl-dependent fluid secretion, In vitro cyst formation of ADPKD cells, and much more. Written by experts in their field who have perfected the methods they write about Covers a wide range of topics, from state-of-the-art techniques that may require specialized equipment, to tried-and-true classic methods in their most refined form Includes cutting-edge, recently developed methods

Cell Biology Jun 02 2020 This text tells the story of cells as the unit of life in a colorful and student-friendly manner, taking an "essentials only" approach. By using the successful model of previously published Short Courses, this text succeeds in conveying the key points without overburdening readers with secondary information. The authors (all active researchers and educators) skillfully present concepts by illustrating them with clear diagrams and examples from current research. Special boxed sections focus on the importance of cell biology in medicine and industry today. This text is a completely revised, reorganized, and enhanced revision of From Genes to Cells.

Yeast Dec 09 2020 Finally, a stand-alone, all-inclusive textbook on yeast biology. Based on the feedback resulting from his highly successful monograph, Horst Feldmann has totally rewritten the contents to produce a comprehensive, student-friendly textbook on the topic. The scope has been widened, with almost double the content so as to include all aspects of yeast biology, from genetics via cell biology right up to biotechnology applications. The cell and molecular biology sections have been vastly expanded, while information on other yeast species has been added, with contributions from additional authors. Naturally, the illustrations are in full color throughout, and the book is backed by a complimentary website. The resulting textbook caters to the needs of an increasing number of students in biomedical research, cell and molecular biology, microbiology and biotechnology who end up using yeast as an important tool or model organism.

Essentials of Stem Cell Biology Oct 26 2019 First developed as an accessible abridgement of the successful Handbook of Stem Cells, Essentials of Stem Cell Biology serves the needs of the evolving population of scientists, researchers, practitioners and students that are embracing the latest advances in stem cells. Representing the combined effort of seven editors and more than 200 scholars and scientists whose pioneering work has defined our understanding of stem cells, this book combines the prerequisites for a general understanding of adult and embryonic stem cells with a presentation by the world's experts of the latest research information about specific organ systems. From basic biology/mechanisms, early development, ectoderm, mesoderm, endoderm, methods to application of stem cells to specific human diseases, regulation and ethics, and patient perspectives, no topic in the field of stem cells is left uncovered. Selected for inclusion in Doody's Core Titles 2013, an essential collection development tool for health sciences libraries Contributions by Nobel Laureates and leading international investigators Includes two entirely new chapters devoted exclusively to induced pluripotent stem (iPS) cells written by the scientists who made the breakthrough Edited by a world-renowned author and researcher to present a complete story of stem cells in research, in application, and as the subject of political debate Presented in full color with glossary, highlighted terms, and bibliographic entries replacing references

Histology and Cell Biology: An Introduction to Pathology E-Book Jun 26 2022 Linking basic science to clinical application throughout, Histology and Cell Biology: An Introduction to Pathology, 5th Edition, helps students build a stronger clinical knowledge base in the challenging area of pathologic abnormalities. This award-winning text presents key concepts in an understandable, easy-to-understand manner, with full-color illustrations, diagrams, photomicrographs, and pathology photos fully integrated on every page. Student-friendly features such as highlighted clinical terms, Clinical Conditions boxes, Essential Concepts boxes, concept mapping animations, and more help readers quickly grasp complex information. Features new content on cancer immunotherapy, satellite cells and muscle repair, vasculogenesis and angiogenesis in relation to cancer treatment, and mitochondria replacement therapies. Presents new material on ciliogenesis, microtubule assembly and disassembly, chromatin structure and condensation, and X chromosome inactivation, which directly impact therapy for ciliopathies, infertility, cancer, and Alzheimer's disease. Provides thoroughly updated information on gestational trophoblastic diseases, molecular aspects of breast cancer, and basic immunology, including new illustrations on the structure of the T-cell receptor, CD4+ cells subtypes and functions, and the structure of the human spleen. Uses a new, light green background throughout the text to identify essential concepts of histology – a feature requested by both students and instructors to quickly locate which concepts are most important for beginning learners or when time is limited. These essential concepts are followed by more detailed information on cell biology and pathology. Contains new Primers in most chapters that provide a practical, self-contained integration of histology, cell biology, and pathology – perfect for clarifying the relationship between basic and clinical sciences. Identifies clinical terms throughout the text and lists all clinical boxes in the table of contents for quick reference. Helps students understand the links between chapter concepts with concept mapping animations on Student Consult™ – an outstanding supplement to in-class instruction.

The Dictionary of Cell and Molecular Biology Jan 10 2021 The Dictionary of Cell and Molecular Biology, Fifth Edition, provides definitions for thousands of terms used in the study of cell and molecular biology. The headword count has been expanded to 12,000 from 10,000 in the Fourth Edition. Over 4,000 headwords have been rewritten. Some headwords have second, third, and even sixth definitions, while fewer than half are unchanged. Many of the additions were made to extend the scope in plant cell biology, microbiology, and bioinformatics. Several entries related to specific pharmaceutical compounds have been removed, while some generic entries (“alpha blockers,” “NSAIDs,” and “tetracycline antibiotics, for example), and some that are frequently part of the experimentalist's toolkit and probably never used in the clinic, have been retained. The Appendix includes prefixes for SI units, the Greek alphabet, useful constants, and single-letter codes for amino acids. Thoroughly revised and expanded by over 20% with over 12,000 entries in cellular and molecular biology Includes expanded coverage of terms, including plant molecular biology, microbiology and biotechnology areas Consistently provides the most complete short definitions of technical terminology for anyone working in life sciences today Features extensive cross-references Provides multiple definitions, notes on word origins, and other useful features

Histology and Cell Biology: An Introduction to Pathology E-Book Sep 25 2019 Histology and Cell Biology: An Introduction to Pathology uses a wealth of vivid, full-color images to help you master histology and cell biology. Dr. Abraham L. Kierszenbaum presents an integrated approach that correlates normal histology with cellular and molecular biology, pathology, and clinical medicine throughout the text. A unique pictorial approach—through illustrative diagrams, photomicrographs, and pathology photographs—paired with bolded words, key clinical terms in red, and clinical boxes and "Essential Concepts" boxes that summarize important facts give you everything you need to prepare for your course exams as well as the USMLE Step 1. Access to studentconsult.com, with USMLE-style multiple-choice review questions, downloadable images, and online only references. Easily find and cross-reference information through a detailed table of contents that highlights clinical examples in red. Review material quickly using pedagogical features, such as Essential Concept boxes, bolded words, and key clinical terms marked in red, that emphasize key details and reinforce your learning. Integrate cell biology and histology with pathology thanks to vivid descriptive illustrations that compare micrographs with diagrams and pathological images. Apply the latest developments in pathology through updated text and new illustrations that emphasize appropriate correlations. Expand your understanding of clinical applications with additional clinical case boxes that focus on applying cell and molecular biology to clinical conditions. Effectively review concepts and reinforce your learning using new Concept Map flow charts that provide a framework to illustrate the integration of cell-tissue-structure-function within a clinical-pathology context.

Encyclopedia of Cell Biology Apr 12 2021 The Encyclopedia of Cell Biology offers a broad overview of cell biology, offering reputable, foundational content for researchers and students across the biological and medical sciences. This important work includes 285 articles from domain experts covering every aspect of cell biology, with fully annotated figures, abundant illustrations, videos, and references for further reading. Each entry is built with a layered approach to the content, providing basic information for those new to the area and more detailed material for the more experienced researcher. With authored contributions by experts in the field, the Encyclopedia of Cell Biology provides a fully cross-referenced, one-stop resource for students, researchers, and teaching faculty across the biological and medical sciences. Fully annotated color images and videos for full comprehension of concepts, with layered content for readers from different levels of experience Includes information on cytokinesis, cell biology, cell mechanics, cytoskeleton dynamics, stem cells, prokaryotic cell biology, RNA biology, aging, cell growth, cell injury, and more In-depth linking to Academic Press/Elsevier content and additional links to outside websites and resources for further reading A one-stop resource for students, researchers, and teaching faculty across the biological and medical sciences

Cell Biology and Translational Medicine, Volume 12 Aug 24 2019 Much research has focused on the basic cellular and molecular biological aspects of stem cells. Much of this research has been fueled by their potential for use in regenerative medicine applications, which has in turn spurred growing numbers of translational and clinical studies. However, more work is needed if the potential is to be realized for improvement of the lives and well-being of patients with numerous diseases and conditions. This book series 'Cell Biology and Translational Medicine (CBTMed)' as part of Springer Nature's long-standing and very successful Advances in Experimental Medicine and Biology book series, has the goal to accelerate advances by timely information exchange. Emerging areas of regenerative medicine and translational aspects of stem cells are covered in each volume. Outstanding researchers are recruited to highlight developments and remaining challenges in both the basic research and clinical arenas. This current book is the twelfth volume of a continuing series.

Molecular and Cell Biology of Cancer Apr 24 2022 This textbook takes you on a journey to the basic concepts of cancer biology. It combines developmental, evolutionary and cell biology perspectives, to then wrap-up with an integrated clinical approach. The book starts with an introductory chapter, looking at cancer in a nut shell. The subsequent chapters are detailed and the idea of cancer as a mass of somatic cells undergoing a micro-evolutionary Darwinian process is explored. Further, the main Hanahan and Weinberg “Hallmarks of Cancer” are revisited. In most chapters, the fundamental experiments that led to key concepts, connecting basic biology and biomedicine are highlighted. In the book's closing section all of these concepts are integrated in clinical studies, where molecular diagnosis as well as the various classical and modern therapeutic strategies are addressed. The book is written in an easy-to-read language, like a one-on-one conversation between the writer and the reader, without compromising the scientific accuracy. Therefore, this book is suited not only for advanced undergraduates and master students but also for patients or curious lay people looking for a further understanding of this shattering disease

