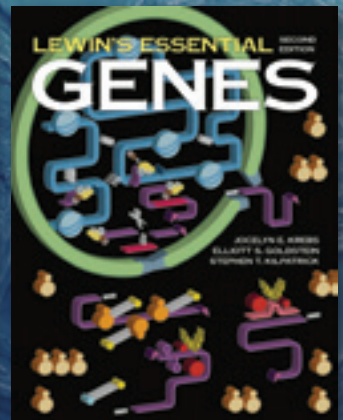
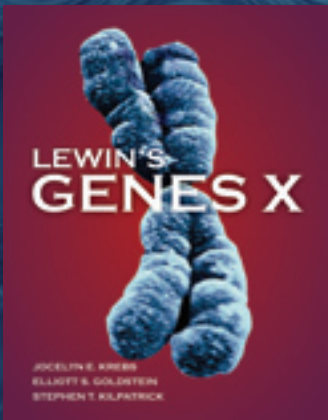


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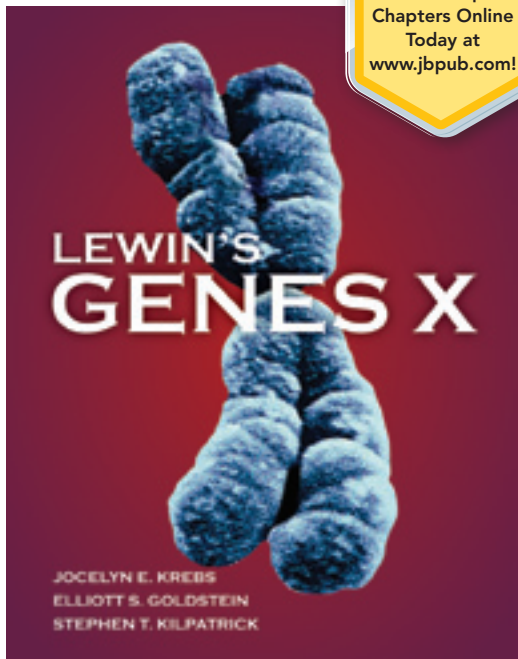
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Lewin's GENES X

Jocelyn E. Krebs,
University of Alaska, Anchorage
Elliott S. Goldstein,
Arizona State University
Stephen T. Kilpatrick,
University of Pittsburgh at Johnstown

ISBN-13: 978-0-7637-6632-0
Hardcover • 936 Pages • © 2011

For decades *Lewin's GENES* has provided the teaching community with the most cutting edge presentation of molecular biology and molecular genetics, covering gene structure, sequencing, organization, and expression. The latest edition, with a new author team, has enlisted 21 subject matter experts from top institutions to provide revisions and content updates in their individual area of expertise, ensuring that *Lewin's GENES X* is the most current and comprehensive text in the field. Informative new chapters, as well as a reorganization of material, provide the most logical flow of topics. *Lewin's GENES X* also contains new pedagogical features to help students learn as they read and an online student study guide allows student to test themselves on key material.



Key Features

- New to this edition, Chapter 3, *Methods in Molecular Biology and Genetic Engineering*, provides an introduction to the concepts and practices of laboratory techniques early in the text.
- A New Chapter 8, *Genome Evolution*, combines, expands, and updates material that was spread among various chapters in previous editions.
- Chapter 22, *mRNA Stability and Localization*, was entirely rewritten and updated to cover more advanced topics.
- Chapter 30, *Regulatory RNA and microRNA*, was dramatically expanded to include material on RNAi pathways.
- Many new figures reflect developments in the field, particularly in the area of chromatin structure and function, epigenetics, and regulation by noncoding and microRNA in eukaryotes.

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- Chapter 2 Genes Code for Proteins
- Chapter 3 Methods in Molecular Biology and Genetic Engineering
- Chapter 4 The Interrupted Gene
- Chapter 5 The Content of the Genome
- Chapter 6 Genome Sequences and Gene Numbers
- Chapter 7 Clusters and Repeats
- Chapter 8 Genome Evolution
- Chapter 9 Chromosomes
- Chapter 10 Chromatin

Part 2 DNA Replication and Recombination

- Chapter 11 The Replicon
- Chapter 12 Extrachromosomal Replicons
- Chapter 13 Bacterial Replication Is Connected to the Cell Cycle

- Chapter 14 DNA Replication
- Chapter 15 Homologous and Site-Specific Recombination
- Chapter 16 Repair Systems
- Chapter 17 Transposable Elements and Retroviruses
- Chapter 18 Somatic Recombination and Hypermutation in the Immune System

Part 3 Transcription and Posttranscriptional Mechanisms

- Chapter 19 Prokaryotic Transcription
- Chapter 20 Eukaryotic Transcription
- Chapter 21 RNA Splicing and Processing
- Chapter 22 mRNA Stability and Localization
- Chapter 23 Catalytic RNA
- Chapter 24 Translation
- Chapter 25 Using the Genetic Code

Part 4 Gene Regulation

- Chapter 26 The Operon
- Chapter 27 Phage Strategies
- Chapter 28 Eukaryotic Transcription Regulation
- Chapter 29 Epigenetic Effects Are Inherited

Extensive Chapter Openers identify key concepts discussed and highlighted within the chapter.

Incorporates a New Student-Friendly Writing Style and Enhanced Pedagogy



Supplements:

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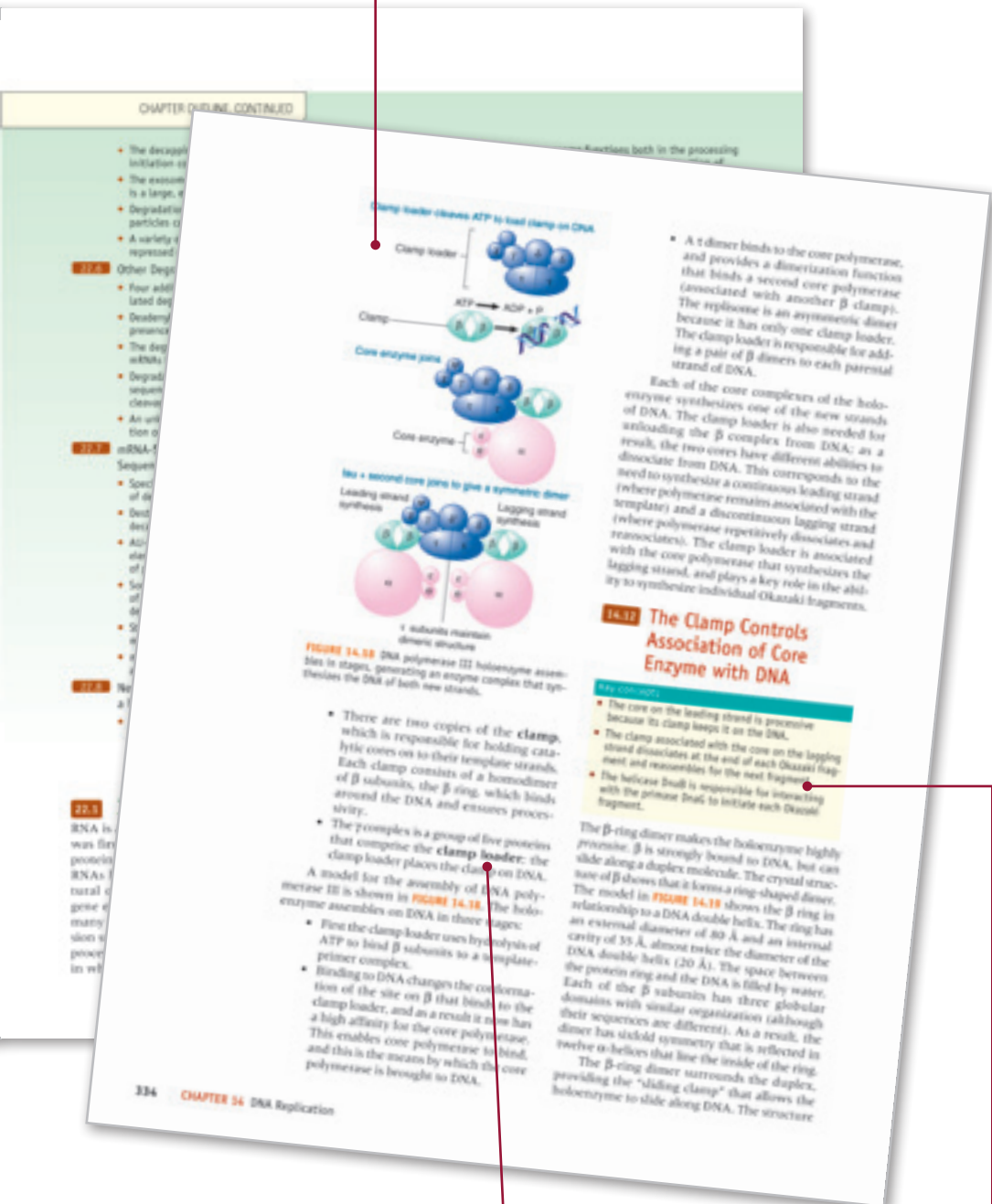
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The *Online Student Study Guide* is an interactive, electronic study guide dedicated exclusively to this title. A variety of activities are available to help students review class material, such as chapter summaries, Web-based learning exercises, study quizzes, a searchable glossary, and links to animations, videos, and podcasts.

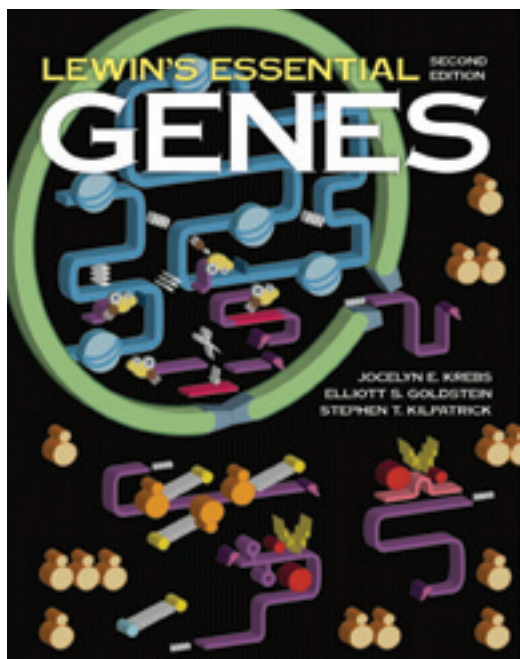
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Key Terms are highlighted in bold type and compiled in the **Glossary** at the end of the book.

Bulleted Key Concepts Boxes summarize the highlights of each section.



Lewin's Essential GENES

Second Edition

Jocelyn E. Krebs,
University of Alaska, Anchorage
Elliott S. Goldstein,
Arizona State University
Stephen T. Kilpatrick,
University of Pittsburgh at Johnstown

ISBN-13: 978-0-7637-5915-5
Paperback • 809 Pages • © 2010

Completely revised and updated with the latest findings in the field, the second edition of *Lewin's Essential Genes* provides students with a fundamental background in 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* sections, and several categories of special

topics boxes expand and reinforce important concepts. The reorganization of topics allows students to focus more sharply on the key material at hand and improves the natural flow of course material.

Key Features of the Second Edition:

- New **Special Topics Boxes** provide a balanced approach and serve to promote greater understanding of key material. These boxes fall into four categories:
 - *Essential Ideas* boxes reinforce and clearly explain concepts critical to the chapter topic
 - *Medical Applications* boxes provide clear links between basic molecular principles, and human health
 - *Historical Perspectives* boxes supply the background information or experimental paths that led to our current knowledge
 - *Methods and Techniques* boxes describe how powerful methods in molecular biology are used
- **Concept and Reasoning Checks** consist of one or two questions at the end of each chapter section that ask students to pause and assess their understanding of the material they have just read. These questions require critical thinking or integration of section topics.
- **Key Concepts** comprise bulleted lists of important points that follow each chapter section.
- **Further Readings** at the end of every chapter direct students to current review articles and seminal research papers, providing further sources of information to reinforce and elaborate on chapter material.
- The text includes significantly expanded and updated sections on chromatin remodeling, epigenetics, the RNA world, and RNAi.

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5. Genome Sequences and Genome Numbers
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10. Protein Localization

Part III: Prokaryotic Gene Expression

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12. The Operon
13. Regulatory RNA
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Part IV: DNA Replication and Recombination

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16. Extrachromosomal Replicons
17. Bacterial Replication in Connected to the Cell Cycle
18. DNA Replication
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20. Repair Systems
21. Transposons, Retroviruses, and Retrotransposons
22. Immune Diversity
23. Chromosomes

Part V: Eukaryotic Gene Expression

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25. Eukaryotic Transcription
26. Eukaryotic Transcription Regulation
27. Epigenetic Effects are Inherited
28. RNA Splicing and Processing
29. Catalytic RNA
30. Genetic Engineering

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Lewin's CELLS

Second Edition

Lynne Cassimeris,
Lehigh University,
George Plopper,
Rensselaer Polytechnic Institute
Vishwanath R. Lingappa,
University of California, San Francisco, Prosetta
Bioconformatics, Inc.

ISBN-13: 978-0-7637-6664-1
Hardcover • 1080 Pages • © 2011

Completely revised to incorporate the latest data in the field, *Lewin's CELLS, Second Edition* is the quintessential resource for advanced undergraduate and graduate students entering the world of cell biology. Redesigned to incorporate new learning tools, this edition continues to provide readers with current coverage of the structure, organization, growth, regulation, movements, and interaction of cells, with an emphasis on eukaryotic cells. Under the direction of three expert lead editors, new chapters on biochemistry, metabolism, and general molecular

biology have been added by subject specialists. All chapters have been carefully edited to maintain consistent use of terminology and to achieve a homogenous level of detail and rigor. The design incorporates many new pedagogical elements, including Concept & Reasoning Checks, boxed topics on cell biology methods, clinical applications, and more.

New and Key Features

- Includes four new chapters: *Bioenergetics, DNA Structure, Replication, and Repair, Transcription, Translation, and Gene Regulation, and Protein Structure and Function.*
- Incorporates new Medical Applications Boxes, Historical Perspectives Boxes, and Methods and Techniques Boxes.
- New *Concept & Reasoning Checks* ask students to pause and summarize the information presented or critically reason through a question pertaining to the previous section.
- Resources include: an Instructor's Media CD-ROM with a PowerPoint® Image Bank and PowerPoint® Lecture Outlines. A Test Bank and Student Companion Web site are also available.

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- Chapter 7 Membrane Targeting of Proteins
- Chapter 8 Protein Trafficking Between Membranes

Part III The Nucleus

- Chapter 9 Nuclear Structure and Transport
- Chapter 10 Chromatin and Chromosomes

Part IV The Cytoskeleton

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- Chapter 12 Actin
- Chapter 13 Intermediate filaments

Part V Cell Division, Apoptosis, and Cancer

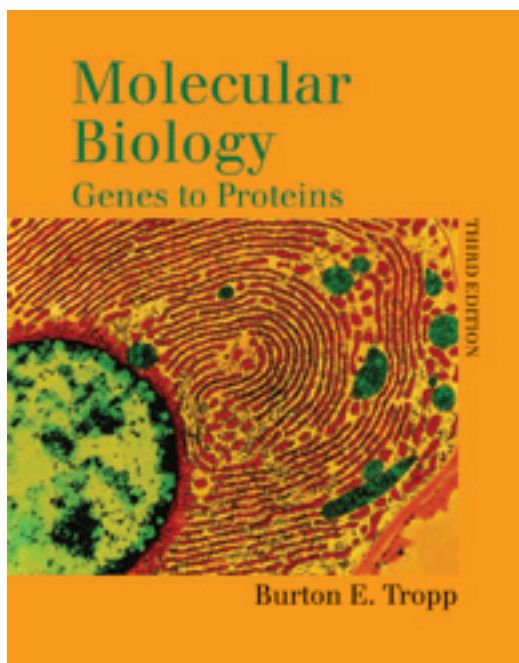
- Chapter 14 Mitosis
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Part VI Cell Communication

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Part VII Prokaryotic and Plant Cells

- Chapter 20 Prokaryotic Cell Biology
- Chapter 21 Plant Cell Biology



Molecular Biology

Genes to Proteins

Third Edition

Burton E. Tropp,

Queens College, The City University of New York

ISBN-13: 978-0-7637-0916-7

Hardcover • 1000 Pages • © 2008

The third edition of *Molecular Biology: Genes to Proteins* is a comprehensive guide through the basic molecular processes and genetic phenomena of both prokaryotic and eukaryotic cells. Designed for undergraduate and first year graduate students, this multi-purpose text has been completely updated to include many important advances made in the field of molecular biology. Maintaining the original structure-function approach evident in the first two editions of David Freifelder's classic text, this book provides students with an accessible overview of molecular biology before moving into more in-depth discussions. Divided into six sections, topics are strategically arranged to cover basic information that is necessary in understanding the more advanced topics focused on in later sections.

Sections 1 and 2, *Protein Structure and Function and Nucleic Acids and Nucleoproteins* provide the information required to understand the chemical basis of molecular biology.

Section 3, *Genetics and Virology* provides information required to understand the biological basis of molecular biology.

Section 4, *DNA Metabolism* explores DNA replication, repair, and recombination in bacteria, eukaryotes and archaea.

Section 5, *RNA Synthesis and Processing* examines mechanisms that bacteria, eukaryotes, and archaea use to synthesize RNA, regulate RNA synthesis, and process transcripts to form mature RNA molecules.

Section 6, *Protein Synthesis* describes the structure and function of the bacterial protein synthetic machinery in bacteria, eukaryotes and archaea.

Key Features

- Includes up-to-date content and developments within molecular biology.
- Chapters on current topics are contributed by leading experts in the field:
 - DNA Recombination by Hannah Klein, PhD., NYU Medical Center
 - DNA Transposition by Joseph Peters, PhD., Cornell University
- Provides a balanced approach to the historical, experimental, and medical/clinical aspects of molecular biology.
- A student-friendly writing style and “discovery approach” draws students into the text and states how the original information was obtained before moving on to more advanced topics.
- Includes a new contemporary, full-color art program.

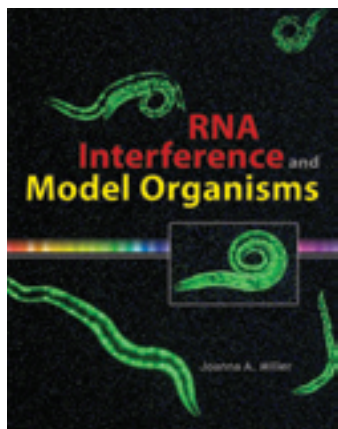
Supplements

Instructor Resources

The Instructor's ToolKit CD-ROM includes a PowerPoint Image Bank, PowerPoint Lecture Outline Slides, and Instructor's Manual. A Test Bank is available as an online download and works with most course management systems.

For Students

Companion Web site: <http://biology.jbpub.com/book/molecular/> offers teaching aids and helpful learning resources. It includes Chapter Outlines, an Interactive Glossary, Molecular Links, Chapter Quizzes, Videos and Animations, and more!

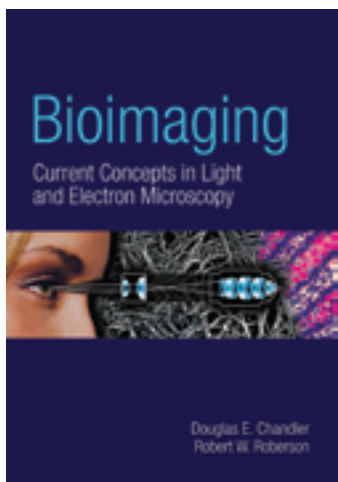


RNA Interference and Model Organisms

Joanna Miller,
North Carolina State University

ISBN-13: 978-0-7637-5431-0
eBook • 256 Pages • © 2011
Available September 2010

RNA interference (RNAi) is a powerful method used to silence gene expression, and has proved to be an effective tool in a wide variety of organisms. Ideal for the upper-level undergraduate and graduate student, or for use as a professional reference, this book helps readers understand the history of RNAi and how it can be applied to model organisms. It begins with a thorough explanation of the history of RNAi and its applications in common model organisms with an emphasis on the experimental design. Readers will then develop practical proficiency through hands-on experiments in tobacco plants, in the soil worm, *C. elegans*, and in mammalian cell cultures. Using these three systems, readers and practitioners will have the opportunity to assess the applications of gene silencing using both qualitative and quantitative methods that measure messenger RNA and protein levels.



Bioimaging

Current Concepts in Light and Electron Microscopy

Douglas E Chandler,
Arizona State University
Robert W. Roberson,
Arizona State University

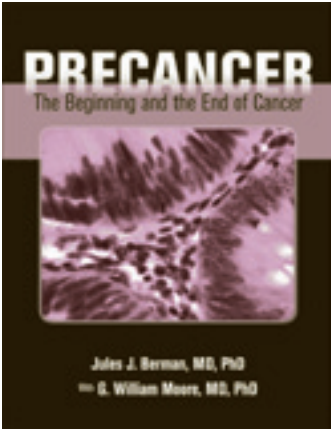
ISBN-13: 978-0-7637-3874-7
Hardcover • 440 Pages • © 2009

The development of microscopy revolutionized the world of cell and molecular biology as we once knew it, and will continue to play an important role in future discoveries. *Bioimaging: Current Concepts in Light and Electron Microscopy* is the optimal text for any undergraduate or graduate bioimaging course, and will serve as an important reference tool for the research scientist. This unique text covers, in great depth, both light and electron microscopy, as well as other structure and imaging techniques like x-ray crystallography and atomic force microscopy. Written in a user-friendly style and covering a broad range of topics, *Bioimaging* describes the state-of-the-art technologies that have powered the field to the forefront of cellular and molecular biological research.

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1. History of Microscopy
2. History of Microscopic Image Reproduction
3. Preparation of Specimens for Light and Electron Microscopy
4. A Brief Introduction to Cell Structure
5. Electromagnetic Radiation and Its Interaction With Matter
6. The Light Microscope and Image Formation
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8. The Transmission Electron Microscope
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10. Cryogenic Techniques in Electron Microscopy
11. Video Microscopy and Electronic Imaging
12. Fluorescence Microscopy
13. Microscopic Localization and Dynamics of Biological Molecules
14. Imaging Ions and Intracellular Messengers
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Precancer

The Beginning and the End of Cancer

Jules J. Berman, PhD, MD

ISBN-13: 978-0-7637-7784-5

Paperback • 186 Pages • © 2010

Nearly every type of cancer passes through a precancer phase, during which it cannot metastasize or invade other tissues. While medicine is not always successful in treating or curing advanced stages of cancers, recent advances in our understanding of carcinogenesis have helped us to develop strategies to prevent, diagnose, and treat many cancers at the precancer stage. Research in this field is escalating rapidly as the evidence increasingly shows that the number of annual cancer deaths could be drastically reduced through the effective treatment and cure of precancer lesions. This book begins by explaining why it has been so difficult to cure cancers, followed by a review of precancer biology, with descriptions of the most common precancer lesions. The final chapters provide practical socio-political and medical goals for precancer treatment, including discussions of the economics and politics of treating precancers.

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- Chapter 3 Why We Have Not Learned How to Cure Advanced Common Cancers

Part II Precancer Pathology and Biology

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- Chapter 5 Biology of Precancers
- Chapter 6 Studying Precancers to Understand Cancers

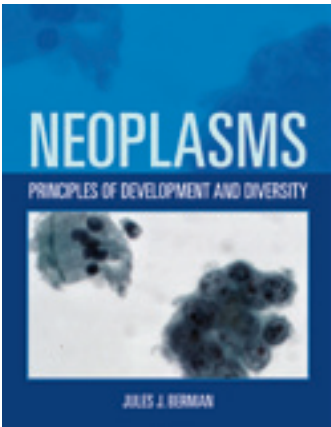
Part III Eradication of Cancer By Treatment of Precancers

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- Chapter 8 Politics of Precancers
- Chapter 9 The End of Cancer

Appendix 1 Cancer Numbers

Appendix 2 Precancer terminology

Appendix 3 Neoplasm classification



Neoplasms

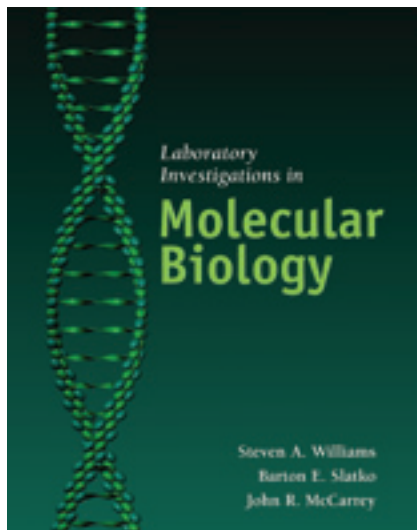
Principles of Development and Diversity

Jules J. Berman, PhD, MD

ISBN-13: 978-0-7637-5570-6

Paperback • 429 Pages • © 2009

This unique text is devoted to the full range of neoplastic properties exhibited by the comprehensive collection of human neoplasms. Like no other book of its kind, it approaches cancer biology by surveying the diversity of neoplasms and by building a classification of neoplasms based on an understanding of the cellular options for tumor development. By grouping neoplasms into a comprehensive classification, we can develop class-specific methods to prevent, detect, and treat cancers. The book is divided into three broad units: speciation, classification and eradication. In the process of developing a classification for neoplasms, dozens of the fundamental questions in neoplastic development are asked and answered. *Neoplasms* provides readers with a fascinating and enjoyable way to learn the otherwise arcane and dense subject of human tumor diversity.



Laboratory Investigations in Molecular Biology

Steven A. Williams,

Smith College and The University of Massachusetts

Barton E. Slatko,

New England Biolabs, Inc.

John R. McCarrey,

University of Texas at San Antonio

ISBN-13: 978-0-7637-3329-2

Spiral • 235 Pages • © 2007

Laboratory Investigations in Molecular Biology

presents well-tested protocols in molecular biology that are commonly used in currently active research labs, and is ideal for college level courses in molecular biology. The experiments are designed to guide students through realistic research projects and to provide them with instruction in methods and approaches that can be immediately translated into research projects conducted in modern research laboratories. Although these experiments have been conducted and optimized over 20 years of teaching the New England Biolabs Molecular Biology Summer Workshops, they are real research projects, not “canned” experiments. The protocols described in the manual are accompanied by available reagent kits that provide quality-tested, pre-packaged reagents to ensure the successful application of these protocols in a laboratory course setting.



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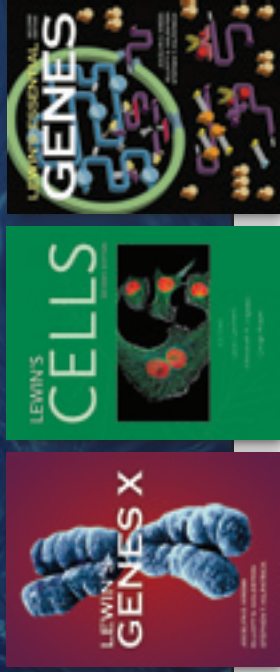
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