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# Cell Physiology Source Book, Fourth Edition: Essentials of Membrane Biophysics

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- Authored by leading researchers in the field
- Clear, concise, and comprehensive coverage of all aspects of cellular physiology, from fundamental concepts to more advanced topics
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**Cell Physiology Source Book, Fourth Edition: Essentials of Membrane Biophysics** From Academic Press **Bibliography**

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### Editorial Review

#### Review

Reviews of previous edition:

*"...a core textbook in cell physiology...The need for such a book is well justified and it fulfills its objectives admirably. It is especially strong on the subjects of signal transduction, membrane biology, ion channels, and neuronal and muscle cell physiology... It is a solid textbook in its field..."--DOODY'S PUBLISHING REVIEWS* *"Cell Physiology Source Book 2e will be useful for advanced undergraduate and graduate students studying cell physiology, cell biophysics, electrophysiology, and biological scientists in many fields. The book is particularly suitable for introducing cell physiology to students with training in the physical sciences and for introducing cell biophysics to students with backgrounds in biology."--BIOPHYSICAL JOURNAL* *"In his preface Sperelakis (emeritus, biophysics, U. of Cincinnati) describes himself as an 80-year-old retired professor living a quiet life when it came to his attention from multiple sources that his third edition text, published in 2001, had become quite rare and yet continued as the text of choice for many courses. At his request his editor surveyed instructors around the country for feedback, and their suggestions have been incorporated in this fourth edition. Chapters are more uniformly structured, the pitch is slightly lower to accommodate beginning graduate and senior-undergraduate students, and topics have been selected so as not to duplicate material readily available elsewhere. Material is arranged in sections on biophysical chemistry, metabolism, second messengers, and ultrastructure; membrane potential, transport physiology, pumps, and exchangers; membrane excitability and ion channels; synaptic transmission and sensory transduction; and muscle and other contractile systems. Academic Press is an imprint of Elsevier."--Reference and Research Book News, October 2012*

#### From the Back Cover

Now in its fourth edition, the Cell Physiology Sourcebook provides comprehensive and authoritative information on cell physiology and membrane biophysics. It is intended primarily as a textbook for advanced undergraduate and graduate students and as a reference for researchers. This multidisciplinary publication offers a strong foundation which will be an invaluable aid to scientists, researchers and students interested in cell physiology, membrane biophysics, electrophysiology, and cell signaling. This book admirably complements the classical medical physiology textbooks, establishing itself as a leading textbook in the field.

#### Key Features:

- Authored by leading researchers in the field
- Clear, concise, and comprehensive coverage of all aspects of cellular physiology, from fundamental concepts to more advanced topics
- Full color illustrations

#### Major Topics covered include:

- Physical chemistry of proteins
- Molecular structure and properties of membranes
- Membrane receptors and second messengers

- Active transport of ions and nonelectrolytes
- Structure and operation of ion channels
- Membrane excitability and propagation
- Ion channels as targets for toxins, drugs, and diseases
- Sensory transduction mechanisms
- Synaptic transmission
- Photosynthesis and bioluminescence
- Physiology of protozoa and bacteria

#### **PRAISE FOR THE PREVIOUS EDITIONS**

The Cell Physiology Sourcebook was on the American Library Association's CHOICE list of Outstanding Academic Books in 1996 (1<sup>st</sup>ed) and in 1998 (2<sup>nd</sup>ed).

"The authoritative volume in the field of cell physiology, and certainly one of the most current sources of comprehensive information available." --CHOICE

"...a core textbook in cell physiology... The need for such a book is well justified, and it fulfills its objectives admirably. It is especially strong on the subjects of signal transduction, membrane biology, ion channels, and neuronal and muscle cell physiology... It is a solid textbook in its field..." --DOODY'S PUBLISHING REVIEWS

"Cell Physiology Source Book 2e will be useful for advanced undergraduate and graduate students studying cell physiology, cell biophysics, electrophysiology, and biological scientists in many fields. The book is particularly suitable for introducing cell physiology to students with training in the physical sciences and for introducing cell biophysics to students with backgrounds in biology." --BIOPHYSICAL JOURNAL

#### **About the Author**

Edna Kaneshiro is a distinguished research professor in the department of biology at the University of Cincinnati where she has been for 43 years. Dr. Kaneshiro's research is on the lipids of eukaryote protists, including free living, parasitic, and opportunistic pathogens. Although work on a number of different protozoa is being performed, Kaneshiro's current focus is on the AIDS-associated opportunistic infection caused by *Pneumocystis carinii*. This organism causes a type of pneumonia that can lead to the death of immunocompromised individuals. *Pneumocystis* proliferates extracellularly in the lung alveolus where lipids constitute a major part of lung surfactant. Thus, lipids are thought to be important to the nutrition, physiology and metabolism of the organism. The biosynthesis of pathogen-specific lipids represents potential targets for drug development. She also has an interest in the cell biology and life history of this poorly understood opportunistic infectious agent. Dr. Kaneshiro is an elected fellow of the American Association for the Advancement of Science and the American Academy of Microbiology

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### **Joel Newsom:**

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