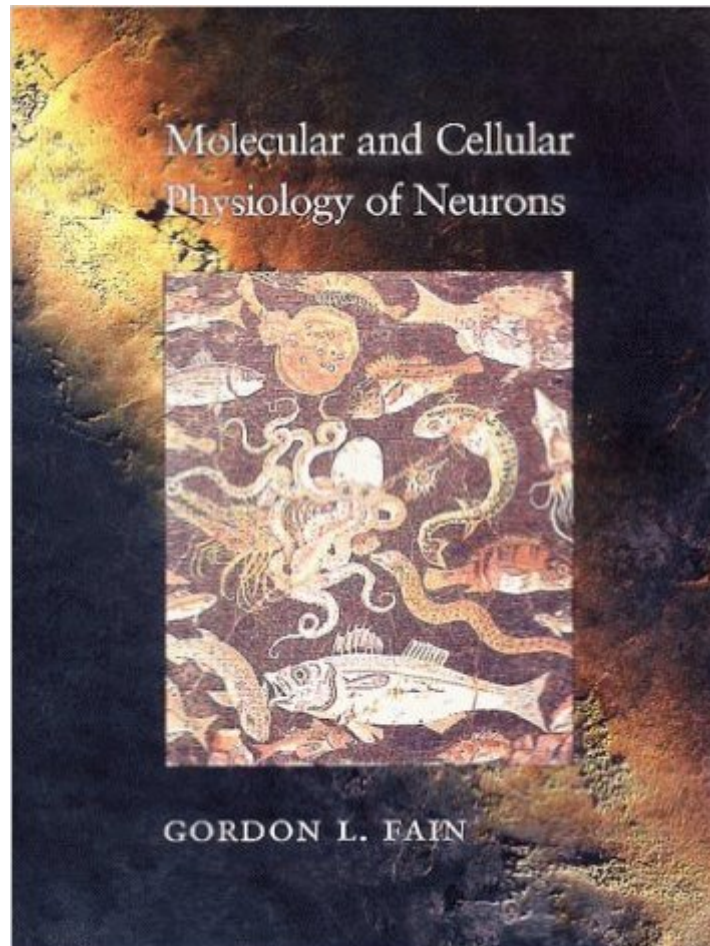


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Molecular And Cellular Physiology Of Neurons



Synopsis

If we are to understand the brain, we must understand how the individual molecules and cells of the nervous system function and ultimately contribute to our behavior. *Molecular and Cellular Physiology of Neurons* provides a comprehensive and up-to-date account of what we now know--and what we want to know and can reasonably expect to discover in the near future--about the functioning of the brain at the level of molecules and cells. *Molecular and Cellular Physiology of Neurons* takes readers from the fundamentals to the most sophisticated concepts and latest discoveries: from membrane potentials to recent experiments on voltage-gated ion channels, from descriptions of receptors, G proteins, effector molecules, and second messengers to an account of our current understanding of long-term potentiation. In each chapter Fain discusses individual experiments that have made crucial contributions to our knowledge and that illustrate the techniques and approaches that have formed our present view of nerve cell function. Extensive illustrations add to this vivid account of not only what we know about cellular and molecular neurophysiology but how we know it.

Book Information

Hardcover: 674 pages

Publisher: Harvard University Press; 1 edition (August 31, 1999)

Language: English

ISBN-10: 0674581555

ISBN-13: 978-0674581555

Product Dimensions: 8.3 x 1.8 x 9.6 inches

Shipping Weight: 2.7 pounds (View shipping rates and policies)

Average Customer Review: 4.5 out of 5 starsÂ Â See all reviewsÂ (4 customer reviews)

Best Sellers Rank: #1,607,915 in Books (See Top 100 in Books) #190 inÂ Books > Medical Books > Basic Sciences > Histology #608 inÂ Books > Medical Books > Basic Sciences > Cell Biology #1083 inÂ Books > Textbooks > Medicine & Health Sciences > Medicine > Basic Sciences > Neuroscience

Customer Reviews

Dr. Fain rocks! He explains things so clearly that even though this text is intended for advanced undergrads or beginning grad students, it can be understood by most people who have taken just one semester of introductory neurobiology. There is so much good stuff in this book that I consult it very often, even though I am a pretty experienced neurophysiologist and "am supposed" not to

need this book any more. However, if you haven't taken an introductory neuroscience course and need a more basic text, then I highly recommend "The Neuron: Cell and Molecular Biology" by Irwin Levitan and Leonard Kaczmarek. After that, if you want to know more about neurophysiology, read the Fain book.

This book has some good qualities, but I wouldn't say it's outstanding. It does a great job presenting concepts to readers without demanding a lot of neuroscience background. However, it falls short of much higher-level technical precision. The text introduces ideas in an approachable manner and usually provides explanations in the context of specific examples, but often it lacks strong, generally applicable conclusions. I found myself having to infer what would happen in situations unlike the examples. Older undergraduates and 1st-year grads should find this book approachable and helpful in an appropriate class. However, I think the book is limited in its usefulness as a reference to pull off the bookshelf from time to time. Sometimes I had the feeling I was reading a journal article rather than a textbook. Many of the figures seem to present data as opposed to illustrating concepts, and the figures and equations only make sense as part of the text. There are no standalone equation boxes for quick review, and the appendix simply identifies symbols used.

This is a great introductory textbook to cellular neurophysiology. It very clearly explains the principles behind passive and active membrane properties, excitatory and inhibitory synaptic transmission, neuromodulation and synaptic plasticity. One can go through it without much of a quantitative background. Overall, a great source of information.

Indispensable background.

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