

Springer

1st
edition

2012, VIII, 572 p.

Printed book

Hardcover

Printed book

Hardcover

ISBN 978-94-007-3857-7

\$ 249,99

Available

Discount group

Professional Books (2)

Product category

Contributed volume

Other renditions

Softcover

ISBN 978-94-017-8380-4

Softcover

ISBN 978-94-007-3859-1

Biomedicine : Neurosciences

Le Novère, N. (Ed.)

Computational Systems Neurobiology

- Covers the whole spectrum of computational modeling of neuronal systems, from the molecule to the organ
- Contains several introductory chapters for newcomers, but also describes state of the art research
- The book can be read as a whole but chapters can also be read in isolation

Computational neurosciences and systems biology are among the main domains of life science research where mathematical modeling made a difference. This book introduces the many different types of computational studies one can develop to study neuronal systems. It is aimed at undergraduate students starting their research in computational neurobiology or more senior researchers who would like, or need, to move towards computational approaches. Based on their specific project, the readers would then move to one of the more specialized excellent textbooks available in the field. The first part of the book deals with molecular systems biology. Functional genomics is introduced through examples of transcriptomics and proteomics studies of neurobiological interest. Quantitative modelling of biochemical systems is presented in homogeneous compartments and using spatial descriptions. A second part deals with the various approaches to model single neuron physiology, and naturally moves to neuronal networks. A division is focused on the development of neurons and neuronal systems and the book closes on a series of methodological chapters. From the molecules to the organ, thinking at the level of systems is transforming biology and its impact on society. This book will help the reader to hop on the train directly in the tank engine.

Order online at springer.com/booksellers**Springer Nature Customer Service Center LLC**

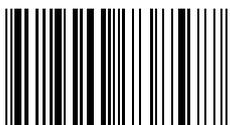
233 Spring Street

New York, NY 10013

USA

T: +1-800-SPRINGER NATURE

(777-4643) or 212-460-1500

customerservice@springernature.com

ISBN 978-94-007-3857-7 / BIC: PSAN / SPRINGER NATURE: SCB18006

Prices and other details are subject to change without notice. All errors and omissions excepted. Americas: Tax will be added where applicable. Canadian residents please add PST, QST or GST. Please add \$5.00 for shipping one book and \$ 1.00 for each additional book. Outside the US and Canada add \$ 10.00 for first book, \$5.00 for each additional book. If an order cannot be fulfilled within 90 days, payment will be refunded upon request. Prices are payable in US currency or its equivalent.