

NEW FROM OXFORD UNIVERSITY PRESS

# Stochastic Methods in Neuroscience

Edited by **Carlo Laing**, Institute of Information and Mathematical Sciences, Massey University, New Zealand and  
**Gabriel J Lord**, Heriot-Watt University, Edinburgh

## KEY FEATURES:

- **Topical and timely work in a growing field**
- **Brings together research from disparate sources**
- **Introductory material through to cutting edge research**

## **Readership**

Graduates and researchers in computational neuroscience, stochastic systems, statistics and mathematics.

Computational or mathematical neuroscience is a research area currently of great interest, due to, amongst other factors, rapid increases in computing power, increases in the ability to record large amounts of neurophysiological data, and a realisation amongst both neuroscientists and mathematicians that each can benefit from collaborating with the other.

Suitable for graduates and researchers in computational neuroscience, stochastic systems, and neuroscientists seeking to learn more about recent advances in the modelling and analysis of noisy neural systems, this text presents an overview of neuroscience and the role of noise via a series of self-contained chapters on major aspects, written by experts in their particular field. These range over Markov chain models for ion channel release, stochastically forced single neurons and population of neurons, statistical methods for parameter estimation, and the numerical approximation these models. Each chapter will give an overview of a particular topic, including its history, important results in the area, and future challenges.

---

July 2009 | 416 pages | Hardback  
978-0-19-923507-0 | **£49.95**

[www.oup.com](http://www.oup.com)

**OXFORD**  
UNIVERSITY PRESS

