



Mechanics of the Cell

SECOND EDITION

Exploring the mechanical features of biological cells, including their architecture and stability, this textbook is a pedagogical introduction to the interdisciplinary fields of cell mechanics and soft matter physics from both experimental and theoretical perspectives.

This second edition has been greatly updated and expanded, with new chapters on complex filaments, the cell division cycle, the mechanisms of control and organization in the cell, and fluctuation phenomena. The textbook is now in full color which enhances the diagrams and allows the inclusion of new microscopy images.

With more than 300 end-of-chapter exercises exploring further applications, this textbook is ideal for advanced undergraduate and graduate students in physics and biomedical engineering. A website hosted by the author contains extra support material, diagrams and lecture notes, and is available at www.cambridge.org/Boal.

David Boal is Professor Emeritus in the Department of Physics at Simon Fraser University, Canada. He has been working in the field of biophysics for the past 20 years, and he now studies the mechanical issues in the origin of life.

Cover illustration: image of a primary cultured hippocampal neuron stained for nuclear DNA (blue), the Golgi apparatus (yellow), dendrites (red), and secretory vesicles (green). Photo credit: Pouya Mafi and Michael Silverman.

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