

Quantifying Life offers an accessible introduction to the breadth of mathematical modeling used in biology today. Assuming only a foundation in high school mathematics, it takes an innovative computational approach to developing mathematical skills and intuition. Through lessons illustrated with copious examples, mathematical and programming exercises, literature discussion questions, and computational projects of various degrees of difficulty, students build and analyze models based on current research papers and learn to implement them in the R programming language. This interplay of mathematical ideas, systematically developed programming skills, and a broad selection of biological research topics makes *Quantifying Life* an invaluable guide for seasoned life scientists and the next generation of biologists alike.

"Taking a rare modeling approach, Kondrashov covers all of the mathematics and computation that biology students need, simultaneously introducing readers to programming in R (or any language really) and focusing on computational examples. And the writing is outstanding, the best I've seen in a mathematics text. I love this book—I will use pieces of it in every class I teach."

—SARAH HEWS, HAMPSHIRE COLLEGE

"Very exciting, especially for life science students and those who teach biology. There is a growing need for more quantitative understanding among life scientists, and the concepts and tools provided in *Quantifying Life* are exactly the types of tools the field needs. It includes many of the standard tools of modeling but places an emphasis on stochastic processes and computation, two topics less common to many introductory modeling texts. It is unique in its inclusion of Bayesian analysis, Markov models, the use of linear algebra techniques in modeling, and a strong programming component, all designed for students with very little mathematical background. Further, the exercises place a much-needed importance on analysis of results and not just memorization of facts. The conversational style, use of real-world and modern data and examples, and hands-on approach mixing biological and mathematical background with programming in R are fantastic."

—HANNAH CALLENDER, UNIVERSITY OF PORTLAND

DMITRY A. KONDRASHOV is a senior lecturer in the Biological Sciences Collegiate Division at the University of Chicago, where he developed an introductory course in quantitative modeling for biology—the origins of *Quantifying Life*. As an applied mathematician with research interests in protein structures and computational biology, he brings firsthand knowledge of the application of quantitative methods to biological problems and a passionate belief that experience with coding and mathematical skills opens new doors for young biologists.

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