Forthcoming

Honeybee Democracy
Thomas D. Seeley

“Honeybee Democracy is a wonderful book, beautifully written and illustrated, about humanity’s greatest friend among the insects. The honeybee is important not only for its role in agriculture but for what it has taught us concerning the fundamental nature of complex social organization. Seeley, its leading authority, here presents it to a broad readership, with scientific exactitude written in lyrical prose.”
—Edward O. Wilson, coauthor of The Superorganism

Honeybees make decisions collectively—and democratically. Every year, faced with the life-or-death problem of choosing and traveling to a new home, honeybees stake everything on a process that includes collective fact-finding, vigorous debate, and consensus building. In fact, as world-renowned animal behaviorist Thomas Seeley reveals, these incredible insects have much to teach us when it comes to collective wisdom and effective decision making. A remarkable and richly illustrated account of scientific discovery, Honeybee Democracy brings together, for the first time, decades of Seeley’s pioneering research to tell the amazing story of house hunting and democratic debate among the honeybees.

An impressive exploration of animal behavior, Honeybee Democracy shows that decision-making groups, whether honeybee or human, can be smarter than even the smartest individuals in them.

October 2010. 280 pages. 30 color illus. 30 halftones. 26 line illus. 1 table.
Cl: 978-0-691-14721-5 $29.95 | £20.95

TEXT Professors who wish to consider a book from this catalog for course use may request an examination copy. For more information please visit: press.princeton.edu/class.html
New

The Symbiotic Habit
Angela E. Douglas

Throughout the natural world, organisms have responded to predators, inadequate resources, or inclement conditions by forming ongoing mutually beneficial partnerships—or symbioses—with different species. Symbiosis is the foundation for major evolutionary events, such as the emergence of eukaryotes and plant eating among vertebrates, and is also a crucial factor in shaping many ecological communities. The Symbiotic Habit reveals the broad uniformity of symbiotic process across many different symbioses among organisms with diverse evolutionary histories, and demonstrates how symbioses can be used to manage ecosystems, enhance food production, and promote human health.

Angela E. Douglas is the Daljit S. and Elaine Sarkaria Professor of Insect Physiology and Toxicology at Cornell University.

Forthcoming

Collective Animal Behavior
David J. T. Sumpter

Fish travel in schools, birds migrate in flocks, honeybees swarm, and ants build trails. How and why do these collective behaviors occur? Exploring how coordinated group patterns emerge from individual interactions, Collective Animal Behavior reveals why animals produce group behaviors and examines their evolution across a range of species.

Providing a synthesis of mathematical modeling, theoretical biology, and experimental work, David Sumpter investigates how animals move and arrive together, how they transfer information, how they make decisions and synchronize their activities, and how they build collective structures. Sumpter constructs a unified appreciation of how different group-living species coordinate their behaviors and why natural selection has produced these groups.

Containing a wealth of accessible examples as well as qualitative and quantitative features, Collective Animal Behavior will interest behavioral ecologists and all scientists studying complex systems.

David J. T. Sumpter is professor of applied mathematics at Uppsala University in Sweden.
New

The Calculus of Selfishness
Karl Sigmund

How does cooperation emerge among selfish individuals? When do people share resources, punish those they consider unfair, and engage in joint enterprises? These questions fascinate philosophers, biologists, and economists alike, for the “invisible hand” that should turn selfish efforts into public benefit is not always at work. The Calculus of Selfishness looks at social dilemmas where cooperative motivations are subverted and self-interest becomes self-defeating. Karl Sigmund, a pioneer in evolutionary game theory, uses simple and well-known game theory models to examine the foundations of collective action and the effects of reciprocity and reputation.

Exploring basic strategic interactions among individuals guided by self-interest and caught in social traps, The Calculus of Selfishness analyzes to what extent one key facet of human nature—selfishness—can lead to cooperation.

Karl Sigmund is professor of mathematics at the University of Vienna.

Princeton Series in Theoretical and Computational Biology
2010. 184 pages. 51 line illus.
Cl: 978-0-691-14275-3 $35.00 | £24.95

The Social Amoebae
The Biology of Cellular Slime Molds
John Tyler Bonner

“[This] book is beautifully written, enlightening, fascinating, historical yet up-to-date, whimsical when appropriate, and informative throughout in its analysis of two of evolution’s major themes—multicellular organization and sociality.”
—Brian Hall, coauthor of Strickberger’s Evolution

2009. 160 pages. 34 line illus.
Cl: 978-0-691-13939-5 $20.95 | £14.95

Exploring Animal Social Networks
Darren P. Croft, Richard James & Jens Krause

“Exploring Animal Social Networks shows behavioral biologists how to apply social network theory to animal populations. In doing so, Croft, James, and Krause illustrate the connections between an animal’s individual behaviors and how these, in turn, influence and are influenced by behavior at the population level.”
—Choice

2008. 208 pages. 47 line illus. 17 tables.
Pa: 978-0-691-12752-1 $37.50 | £26.95
Cl: 978-0-691-12751-4 $78.50 | £55.00
Primers in Complex Systems

This series embodies high quality, well-focused writing on central topics in complex systems. Each book serves as a coherent primer on the topic, providing a solid, scientifically accurate introduction to the core elements, including current knowledge, practice, examples, and future frontiers. The primers are accessible to an advanced undergraduate or graduate student, or a non-specialist in the specific area of complex systems covered by the book.

New

Ant Encounters
Interaction Networks and Colony Behavior
Deborah M. Gordon

How do ant colonies get anything done, when no one is in charge? An ant colony operates without a central control or hierarchy, and no ant directs another. Instead, ants decide what to do based on the rate, rhythm, and pattern of individual encounters and interactions—resulting in a dynamic network that coordinates the functions of the colony. Ant Encounters provides a revealing and accessible look into ant behavior from this complex systems perspective.

Deborah M. Gordon is professor of biology at Stanford University.

2010. 184 pages. 2 halftones. 1 line illus.
Pb: 978-0-691-13879-4 $19.95 | £13.95

“Deborah Gordon’s amazingly detailed book on the complex web of interactions in ant colonies makes fascinating reading for anyone who is curious about the world around us. And—even more interestingly from my point of view—this book provides rich fodder for understanding other kinds of collective intelligence, from neurons in the brain to human societies linked by the Internet.”
—Thomas W. Malone, Massachusetts Institute of Technology

Diversity and Complexity
Scott E. Page

This book provides an introduction to the role of diversity in complex adaptive systems. A complex system—such as an economy or a tropical ecosystem—consists of interacting adaptive entities that produce dynamic patterns and structures. Diversity plays a different role in a complex system than it does in an equilibrium system, where it often merely produces variation around the mean for performance measures. In complex adaptive systems, diversity makes fundamental contributions to system performance.

Scott E. Page is the Leonid Hurwicz Collegiate Professor of Complex Systems, Political Science, and Economics at the University of Michigan and an external faculty member at the Santa Fe Institute.

2010. 296 pages. 19 line illus. 26 tables.
Pb: 978-0-691-13767-4 $14.95 | £10.95

“Page engagingly seduces readers into rather deep ideas in complex systems, including sophisticated mathematical formulas, by using a relaxed style with lots of examples. Yet the treatment is rigorous.”
—Simon A. Levin, Princeton University
“A very worthwhile contribution. The authors expose students to quantitative methods using a very hands-on approach. The exercises increase students’ comfort with data analysis and quantitative methods while also helping them to develop independent critical thinking and practical problem-solving skills.”
—Suzanne H. Alonzo, Yale University

New TEXT

An Introduction to Methods and Models in Ecology, Evolution, and Conservation Biology
Edited by Stanton Braude & Bobbi S. Low

This unique textbook introduces undergraduate students to quantitative models and methods in ecology, behavioral ecology, evolutionary biology, and conservation. It explores the core concepts shared by these related fields using tools and practical skills such as experimental design, generating phylogenies, basic statistical inference, and persuasive grant writing. And contributors use examples from their own cutting-edge research, providing diverse views to engage students and broaden their understanding.

- Emphasizes hands-on active learning and collaborative problem solving
- Provides experience with hypothesis testing, experimental design, and scientific reasoning
- Covers core quantitative models and methods in ecology, behavioral ecology, evolutionary biology, and conservation
- Turns “discussion sections” into “thinking labs”
- Restricted instructor’s manual also available

In addition to the editors, the contributors are James Beck, Cawas Behram Engineer, John Gaskin, Luke Harmon, Jon Hess, Jason Kolbe, Kenneth H. Kozak, Robert J. Robertson, Emily Silverman, Beth Sparks-Jackson, and Anton Weisstein.

Stanton Braude is lecturer in biology at Washington University in St. Louis. Bobbi S. Low is professor of resource ecology at the University of Michigan.

2010. 288 pages. 72 halftones. 12 line illus. 80 tables.
Pa: 978-0-691-12724-8 $29.95 | £20.95
Cl: 978-0-691-12723-1 $65.00 | £44.95

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The Princeton Guide to Ecology
Edited by Simon A. Levin

The Princeton Guide to Ecology is a concise, authoritative reference to the field’s major subjects and key concepts. Edited by eminent ecologist Simon Levin, with contributions from an international team of leading ecologists, the book contains more than ninety clear, accurate, and up-to-date articles on the most important topics within seven major areas: autecology, population ecology, communities and ecosystems, landscapes and the biosphere, conservation biology, ecosystem services, and biosphere management.

Simon A. Levin is the George M. Moffett Professor of Biology and a professor of ecology and environmental biology at Princeton University, where he directs the Center for BioComplexity.

2009. 848 pages. 25 color illus. 14 halftones. 185 line illus. 22 tables.
Cl: 978-0-691-12839-9  $95.00 | £65.00

New
The Theory of Island Biogeography Revisited
Edited by Jonathan B. Losos & Robert E. Ricklefs

Robert H. MacArthur and Edward O. Wilson’s The Theory of Island Biogeography, first published by Princeton in 1967, is one of the most influential books on ecology and evolution to appear in the past half century. By developing a general mathematical theory to explain a crucial ecological problem—the regulation of species diversity in island populations—the book transformed the science of biogeography and ecology as a whole. In The Theory of Island Biogeography Revisited, some of today’s most prominent biologists assess the continuing impact of MacArthur and Wilson’s book four decades after its publication.

Jonathan B. Losos is professor in the Department of Organismic and Evolutionary Biology and the curator of herpetology in the Museum of Comparative Zoology at Harvard University. Robert E. Ricklefs is the Curators’ Professor of Biology at University of Missouri, St. Louis.

2009. 496 pages. 11 halftones. 100 line illus. 16 tables.
Pa: 978-0-691-13653-0  $49.50 | £34.95
Cl: 978-0-691-13652-3  $99.50 | £69.95

“Essential reading for … all interested in a holistic view of the world, this marvelous collection presents the flourishing state of ecology today and its even more exciting prospects for the future.”
—Peter H. Raven, Missouri Botanical Garden

“This wonderful and lively book provides a fitting forty-year retrospective on MacArthur and Wilson’s seminal volume. I can easily see it on the shelf of every serious graduate student of community ecology.”
—William H. Schlesinger, Cary Institute of Ecosystem Studies
How to Do Ecology
Richard Karban & Mikaela Huntzinger

“How to Do Ecology contains much of the sage advice that good supervisors have been giving their postgraduate students for years.... [I]t’s absolutely correct and vital information.”
—Robyn K. Whipp, Austral Ecology

2006. 168 pages. 10 line illus.
Pa: 978-0-691-12577-0 $17.95 | £12.50

Resource Strategies of Wild Plants
Joseph M. Craine

“This book provides an in-depth historical review and novel synthesis of resource strategies in wild plants. Craine identifies distinct strategies associated with high resource supply and limitations of nutrients, light, water, and carbon dioxide. This multiresource approach to plant strategies overcomes inconsistencies in earlier strategy frameworks and is well-grounded in ecological, biogeochemical, and evolutionary mechanisms that have shaped patterns of terrestrial plant diversity. This book will be a valuable resource.”
—F. Stuart Chapin III, University of Alaska, Fairbanks

2009. 352 pages. 2 halftones. 37 line illus. 1 table.
Pa: 978-0-691-13912-8 $46.95 | £32.95
Cl: 978-0-691-13911-1 $105.00 | £72.00

Evolutionary Ecology of Parasites
Robert Poulin

“This book, like the first edition, will be a leading text in its field. The style of writing is superbly lucid and well organized. The discussion flows from one topic to the next, creating continuum. Poulin covers an impressive range of information on parasite ecology and evolution.”
—R. C. Tinsley, Parasitology

2006. 360 pages. 109 line illus. 2 tables.
Pa: 978-0-691-12085-0 $52.50 | £36.95
Cl: 978-0-691-12522-0 $57.50 | £39.95

Ecological Models and Data in R
Benjamin M. Bolker

“Bolker’s book is a must-buy for anyone wanting to fit data to models and go beyond hypothesis testing, but it is certainly not an ‘introductory’ text in the sense of ‘simple’. This book is a tour de force for anyone who studied ecology for his or her interest of nature’s working. But it is the one single book that can propel the statistical novice to the cutting edge of statistical ecology—albeit with blood, sweat and tears.”
—Carsten F. Dormann, Basic and Applied Ecology

2008. 408 pages. 99 line illus.
Cl: 978-0-691-12522-0 $57.50 | £39.95

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Forthcoming

Resolving Ecosystem Complexity
Oswald J. Schmitz

"Resolving Ecosystem Complexity presents a modern synthesis of trophic structure and function that addresses some of the most fundamental questions raised by Darwin, Tansley, and Hutchinson. Through rigorous analysis of case studies and data, Schmitz brings to life the importance of direct and indirect interactions on the functioning of ecosystems. This clear and compelling book is a must-read for scientists and educators."
—Adrien Finzi, Boston University

Oswald J. Schmitz is the Oastler Professor of Population and Community Ecology in the Yale School of Forestry and Environmental Studies.

August 2010. 192 pages. 32 line illus. Pa: 978-0-691-12849-8 $35.00 | £24.95 Cl: 978-0-691-12848-1 $65.00 | £44.95

New

Sex Allocation
Stuart West

“This is a great book. It captures the excitement of sex-allocation research, the significant progress that has been made, and the areas that have been relatively neglected. West does a great job of showing the tight connection between evolutionary theory and empirical testing, and the ways both can mutually inspire each other. He deals with all the major issues and guides the reader through the entire field.”
—Jacobus J. Boomsma, University of Copenhagen

Stuart West is professor of evolutionary biology at the University of Oxford.

2009. 480 pages. 107 line illus. 15 tables. Pa: 978-0-691-08964-5 $45.00 | £30.95 Cl: 978-0-691-08963-8 $99.50 | £69.95

Forthcoming

From Populations to Ecosystems
Theoretical Foundations for a New Ecological Synthesis
Michel Loreau

“Michel Loreau has bravely, and successfully, built a new unified framework that harmonizes the disparate, and often conflicting, fields of population biology, community ecology, and ecosystem ecology. This book provides an exciting stimulus for new efforts to test and verify the rich array of insights that he provides.”
—Harold Mooney, Stanford University

Michel Loreau is professor and Canada Research Chair in theoretical ecology at McGill University.

August 2010. 320 pages. 19 halftones. 54 line illus. 4 tables. Pa: 978-0-691-12270-0 $45.00 | £30.95 Cl: 978-0-691-12269-4 $99.50 | £69.95

New

Scale, Heterogeneity, and the Structure and Diversity of Ecological Communities
Mark E. Ritchie

“This is an ambitious book that takes ideas from existing equilibrium-based ecological theory and adds the innovation that population equilibria are determined by resource use in a heterogeneous environment. The ideas the author presents are stimulating. There is no doubt in my mind that this is an important, timely book.”
—Brian A. Maurer, Michigan State University

Mark E. Ritchie is professor of biology at Syracuse University.

2009. 240 pages. 62 line illus. 2 tables. Pa: 978-0-691-09070-2 $35.00 | £24.95 Cl: 978-0-691-09069-6 $75.00 | £52.00
Evolution

Forthcoming

In Search of the Causes of Evolution
From Field Observations to Mechanisms
Edited by Peter R. Grant & B. Rosemary Grant

Evolutionary biology has witnessed breathtaking advances in recent years. Some of its most exciting insights have come from the crossover of disciplines as varied as paleontology, molecular biology, ecology, and genetics. This book brings together many of today’s pioneers in evolutionary biology to describe the latest advances and explain why a cross-disciplinary and integrated approach to research questions is so essential.

Contributors discuss the origins of biological diversity, mechanisms of evolutionary change at the molecular and developmental levels, morphology and behavior, and the ecology of adaptive radiations and speciation. They highlight the mutual dependence of organisms and their environments, and reveal the different strategies today’s researchers are using in the field and laboratory to explore this interdependence.

Peter R. Grant is the Class of 1877 Professor of Zoology (emeritus) at Princeton University. B. Rosemary Grant is professor emeritus of ecology and evolutionary biology at Princeton.

December 2010. 304 pages. 32 color plates. 22 halftones. 56 line illus. 4 tables.
Pa: 978-0-691-14695-9 $49.95 | £34.95
Cl: 978-0-691-14681-2 $75.00 | £52.00

New

With an introduction by Michael Ruse

The Origin Then and Now
An Interpretive Guide to the Origin of Species
David N. Reznick

Charles Darwin’s Origin of Species is one of the most widely cited books in modern science. Yet tackling this classic can be daunting for students and general readers alike because of Darwin’s Victorian prose and the complexity and scope of his ideas. The "Origin" Then and Now is a unique guide to Darwin’s masterwork, making it accessible to a much wider audience by deconstructing and reorganizing the Origin in a way that allows for a clear explanation of its key concepts. The Origin is examined within the historical context in which it was written, and modern examples are used to reveal how this work remains a relevant and living document for today.

David N. Reznick is professor of biology at the University of California, Riverside.

2009. 448 pages. 15 halftones. 17 line illus.
Cl: 978-0-691-12978-5 $29.95 | £20.95

“In this book—there is a beautiful book—the best book I have ever read dealing with the Origin. It will move many people, experts and lay readers alike.”
—Lee Alan Dugatkin, author of Principles of Animal Behavior

Forms of Becoming
The Evolutionary Biology of Development
Alessandro Minelli

“Interesting, unique, and well-written, this book is a great read from a master of the subject.”
—Wallace Arthur, National University of Ireland

Translation funded by SEPS—Segretariato Europeo per le Pubblicazioni Scientifiche
2009. 248 pages. 17 line illus.
Cl: 978-0-691-13568-7 $28.95 | £19.95

Winner of the 2003 Phi Beta Kappa Book Award in Science
Life on a Young Planet
The First Three Billion Years of Evolution on Earth
Andrew H. Knoll

“Andrew Knoll is an ideal guide through this early phase of life's history on the Earth.”
—Stefan Bengtson, Nature

Princeton Science Library
2004. 296 pages. 6 color plates. 25 halftones. 47 line illus.
Pa: 978-0-691-12029-4 $25.95 | £17.95

Winner of the 2004 Award for Best Professional/Scholarly Book in Geology and Earth Science, Association of American Publishers
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Geerat J. Vermeij

“Vermeij is one of the master naturalists of our time.”
—Richard K. Bambach, American Scientist

2006. 464 pages.
Pa: 978-0-691-12793-4 $28.95 | £19.95

One of Choice's Outstanding Academic Titles for 2006
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How Life on Earth Nearly Ended 250 Million Years Ago
Douglas H. Erwin

“Extinction provides a great reference for researchers and the interested lay reader alike.”
—Andrew M. Bush, Science
2008. 320 pages. 32 halftones. 32 line illus.
Pa: 978-0-691-13628-8 $23.95 | £16.95

One of Choice's Outstanding Academic Titles for 2009
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Marten Scheffer

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—M. Evans, Choice

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2009. 400 pages. 6 halftones. 131 line illus.
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Cl: 978-0-691-12203-8 $99.50 | £69.95

Edited and with a new introduction by Michael Ruse
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Thomas Henry Huxley

2009. 176 pages.
Pa: 978-0-691-14130-5 $16.95 | £11.95
Cl: 978-0-691-14192-3 $39.50 | £27.95

Secular Cycles
Peter Turchin & Sergey A. Nefedov

2009. 360 pages. 65 line illus. 68 tables.
Cl: 978-0-691-13696-7 $35.00 | £24.95
Dynamics of Cancer
Incidence, Inheritance, and Evolution
Steven A. Frank

“Frank’s forte in the book is his search for the simplicity that is often masked by the complexities of cancer. With his mathematical models in hand, he turns to the details of cancer genetics, carcinogens, and aging and provides novel integrative insights. … Dynamics of Cancer emphasizes both the multiscale dynamics of the disease and an approach that synthesizes empirical knowledge with parsimonious, mathematical theory. Frank moves the field forward, narrowing the gap between a tragic disease of everyday life and the Darwinian world of the genome.”
—David C. Krakauer, Science

2007. 400 pages. 5 halftones. 106 line illus. 3 tables.
Pa: 978-0-691-13366-9  $46.95 | £32.95
Cl: 978-0-691-13365-2  $115.00 | £80.00

How and Why Species Multiply
The Radiation of Darwin’s Finches
Peter R. Grant & B. Rosemary Grant

“This Princeton-based couple presents their own accessible summary of their life’s research in How and Why Species Multiply. The authors explain the scientific hypotheses involved … with admirable clarity … yet the book’s real strength is not theory but data. The Grants’ account makes exciting and lucid reading. Among those who should take note are doubters of ‘old-fashioned’ research methods who marvel at the prospects of genomics in the lab and wonder what use bird bands have in modern science.”
—Hanna Kokko, Science

2008. 272 pages. 120 color illus. 46 line illus. 3 tables.
Cl: 978-0-691-13360-7  $39.95 | £27.95

Also by Steven A. Frank
Immunology and Evolution of Infectious Disease
2002. 360 pages. 40 line illus.
Pa: 978-0-691-09595-0  $47.95 | £32.95

Also by Steven A. Frank
Foundations of Social Evolution
Monographs in Behavior and Ecology
1998. 280 pages. 2 tables. 39 line illus.
Pa: 978-0-691-05934-1  $55.00 | £37.95

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New

Glimpses of Creatures in Their Physical Worlds
Steven Vogel

Glimpses of Creatures in Their Physical Worlds offers an eye-opening look into how the characteristics of the physical world drive the designs of animals and plants. These characteristics impose limits but also create remarkable and subtle opportunities for the functional biology of organisms. In particular, Steven Vogel examines the size and scale, and trade-offs among different physical processes. He pays attention to how the forms and activities of animals and plants reflect the materials available to nature, and he explores the unique constraints and possibilities provided by fluid flow, structural design, and environmental forces.

Drawing examples from creatures of land, air, and water, the book demonstrates the many uses of biological diversity and how physical forces impact biological organisms.

Steven Vogel is James B. Duke Professor Emeritus of Biology at Duke University.

2009. 328 pages. 16 halftones. 50 line illus. 6 tables.
Pa: 978-0-691-13807-7 $35.00 | £24.95
Cl: 978-0-691-13806-0 $75.00 | £52.00

“This charismatic book is a fascinating read and Vogel is exceptionally good at presenting the material…. [The] most impressive aspect is the wide range of diverse examples collected in one place, displaying a lifetime’s worth of accumulated knowledge and wisdom.”
—Amy S. Johnson, Bowdoin College

also available

One of Choice’s Outstanding Academic Titles for 2004
Comparative Biomechanics
Life’s Physical World
Steven Vogel

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Pa: 978-0-691-11297-8 $85.00 | £59.00
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Bones
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Principles of Animal Locomotion
R. McNeill Alexander

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Pa: 978-0-691-12634-0 $57.50 | £39.95
Cl: 978-0-691-08678-1 $97.50 | £68.00
New

The Calculus of Selfishness
Karl Sigmund

Exploring basic strategic interactions among individuals guided by self-interest and caught in social traps, The Calculus of Selfishness analyzes to what extent one key facet of human nature—selfishness—can lead to cooperation.

Karl Sigmund is professor of mathematics at the University of Vienna.

Princeton Series in Theoretical and Computational Biology
2010. 184 pages. 51 line illus.
Cl: 978-0-691-14275-3 $35.00 | £24.95

Models with Data
Tools and Techniques for Scientific Computing
Ben Klemens

“I am a psychiatric geneticist but my degree is in neuroscience, which means that I now do far more statistics than I have been trained for. I cannot overstate to you the magnitude of the change in my productivity since finding this book. Even after reading the first few chapters, which explain why data analysis is painful and how one can implement a long-term solution, my research moved forward greatly.”

—Amber Baum, National Institute of Mental Health

2008. 472 pages. 35 line illus. 16 tables.
Cl: 978-0-691-13314-0 $69.50 | £48.95

Honorable Mention, 2007 Award for Best Professional/Scholarly Book in Biological Sciences, Association of American Publishers

Sarah P. Otto & Troy Day

“A gentle but thorough introduction to the mathematical techniques employed in ecological and evolutionary theory. Readers who … finish this well-written book will be prepared to read and understand a sizeable fraction of the current literature.”

—Donald L. DeAngelis, Quarterly Review of Biology

2007. 744 pages. 207 line illus. 22 tables.
Cl: 978-0-691-12344-8 $78.50 | £55.00

Models for Ecological Data
An Introduction
James S. Clark

“This volume presents a wealth of interesting research and theory development to encourage further study of primate predation, to guide methodological approaches, and to use in graduate-level courses.”

—Beth A. Kaplin, Ecology

2007. 632 pages. 163 line illus. 21 tables.
Cl: 978-0-691-12178-9 $76.50 | £55.00

Models for Ecological Data—Lab Manual
Pa: 978-0-691-12262-5 $22.95 | £15.95

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Dynamic Models in Biology
Stephen P. Ellner & John Guckenheimer

“What is remarkable about Dynamic Models in Biology is that it truly speaks to students of biological sciences. It puts biology first, and then tries to explain how mathematical tools can explain biological phenomena. Nothing else I’ve seen does this anywhere near as well. The authors have combined their experience to produce an excellent textbook.”
—Bill Satzer, MAA Reviews

2006. 352 pages. 10 halftones. 90 line illus. 15 tables. Pa: 978-0-691-12589-3 $62.50 | £43.95

Feedback Systems
An Introduction for Scientists and Engineers
Karl Johan Åström & Richard M. Murray

“This book provides an introduction to the mathematics needed to model, analyze, and design feedback systems…. Feedback Systems develops transfer functions through the exponential response of a system, and is accessible across a range of disciplines that use feedback in physical, biological, information, and economic systems…. Exercises are provided at the end of every chapter, and an accompanying electronic solutions manual is available.”
—Mechanical Engineering

2008. 408 pages. 24 halftones. 183 line illus. 5 tables. Cl: 978-0-691-13576-2 $50.00 | £34.95

A Mathematical Nature Walk
John A. Adam

“If you are a walker, as I am, your daypack probably contains sunscreen, a poncho, a floppy hat, and a pair of binoculars. After reading this snappy guide to the mathematics of the outdoors, by John Adam … you might consider tossing in a programmable calculator…. A sharp eye and an ingenious mind are at work on every page…. Read this book with pencil and paper in hand. Then go forth, enjoy the view, and impress your friends.”
—Natural History

2009. 288 pages. 17 color illus. 22 halftones. 97 line illus. Cl: 978-0-691-12895-5 $27.95 | £19.95

Also by John A. Adam

Mathematics in Nature
Modeling Patterns in the Natural World

“Mathematics in Nature is an excellent resource for bringing a greater variety of patterns into the mathematical study of nature.”
—Will Wilson, American Scientist

2006. 416 pages. 24 color illus. 84 line illus. 9 tables. Pa: 978-0-691-12796-5 $28.95 | £19.95
Not for sale in South Asia

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press.princeton.edu Mathematical Biology • 13
New

**The Great Ocean Conveyor**
Discovering the Trigger for Abrupt Climate Change

**Wally Broecker**

Wally Broecker is one of the world’s leading authorities on abrupt global climate change. More than two decades ago, he discovered the link between ocean circulation and climate change, in particular how shutdowns of the Great Ocean Conveyor—the vast network of currents that circulate water, heat, and nutrients around the globe—triggered past ice ages. Today, he is among the researchers exploring how our planet’s climate system can abruptly “flip-flop” from one state to another, and who are weighing the implications for the future. In *The Great Ocean Conveyor*, Broecker introduces readers to the science of abrupt climate change while providing a vivid, firsthand account of the field’s history and development.

Rich with personal stories and insights, *The Great Ocean Conveyor* opens a tantalizing window onto how Earth science is practiced.

Wally Broecker is the Newberry Professor of Earth and Environmental Sciences at Columbia University.

2010. 176 pages. 10 halftones. 40 line illus. 12 maps.
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Joseph M. Forshaw is one of Australia’s leading ornithologists and the author of many acclaimed books. Albert Earl Gilbert is one of the world’s foremost bird artists.

2009. 304 pages. 75 color illus. 10 line illus. 11 x 16.
Cl: 978-0-691-14158-9 $150.00
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Footsteps to a New World
K. Thalia Grant & Gregory B. Estes

In 1835, during his voyage on HMS Beagle, Charles Darwin spent several weeks in Galápagos exploring the islands and making extensive notes on their natural history. Darwin in Galápagos is the first book to recreate Darwin’s historic visit to the islands, following in his footsteps day by day and island by island as he records all that he observes around him.

K. Thalia Grant is a naturalist with extensive knowledge of Darwin and Galápagos. Gregory B. Estes has worked as a naturalist in Galápagos since 1982.

2009. 416 pages. 201 color illus. 73 halftones. 4 maps.
Cl: 978-0-691-14210-4 $29.95 | £20.95

“This book is a must for die-hard Darwin fans.”
—Walter L. Cressier, Library Journal

also available

Forthcoming
Honeybee Democracy
Thomas D. Seeley
See page 1 for details.

New
The Princeton Field Guide to Dinosaurs
Gregory S. Paul
See page 18 for details.
Forthcoming

**Why Everyone (Else) Is a Hypocrite**

Evolution and the Modular Mind

**Robert Kurzban**

We’re all hypocrites. Why? Hypocrisy is the natural state of the human mind.

Robert Kurzban shows us that the key to understanding our behavioral inconsistencies lies in understanding the mind’s design. The human mind consists of many specialized units designed by the process of evolution by natural selection. While these modules sometimes work together seamlessly, they don’t always, resulting in impossibly contradictory beliefs, vacillations between patience and impulsiveness, violations of our supposed moral principals, and overinflated views of ourselves.

In clear language, full of wit and rich in examples, Kurzban explains the roots and implications of our inconsistent minds, and why it is perfectly natural to believe that everyone else is a hypocrite.

Robert Kurzban is associate professor of psychology at the University of Pennsylvania.

February 2011. 288 pages. 2 halftones. 1 line illus.
Cl: 978-0-691-14674-4 $27.95 | £19.95

“Kurzban is genuinely clever, sly, succinct, and sometimes hilarious.”
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**Working Together**

Collective Action, the Commons, and Multiple Methods in Practice

**Amy R. Poteete, Marco A. Janssen & Elinor Ostrom**

Advances in the social sciences have emerged through a variety of research methods: field-based research, laboratory and field experiments, and agent-based models. However, which research method or approach is best suited to a particular inquiry is frequently debated and discussed. *Working Together* examines how different methods have promoted various theoretical developments related to collective action and the commons, and demonstrates the importance of cross-fertilization involving multimethod research across traditional boundaries. The authors look at why cross-fertilization is difficult to achieve, and they show ways to overcome these challenges through collaboration.

Amy R. Poteete is assistant professor of political science at Concordia University in Montreal. Marco A. Janssen is assistant professor in the School of Human Evolution and Social Change at Arizona State University. Elinor Ostrom is professor at Indiana University, Bloomington, and Arizona State University, Tempe, and the cowinner of the 2009 Nobel Prize in Economic Sciences.

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Pa: 978-0-691-14604-1 $29.95 | £20.95
Cl: 978-0-691-14603-4 $80.00 | £55.00

“This is a landmark work which crosses boundaries in the social sciences.”
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People and Parasites  
Eugene H. Kaplan

In What’s Eating You? Eugene Kaplan recounts the true and harrowing tales of his adventures with parasites, and in the process introduces readers to the intimately interwoven lives of host and parasite.

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David Goodstein

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David Goodstein is the Frank J. Gilloon Distinguished Teaching and Service Professor in the Department of Physics at the California Institute of Technology.

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