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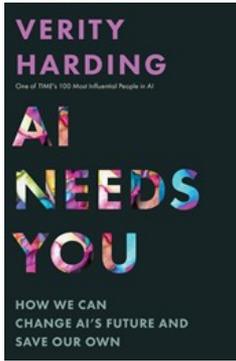
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# Popular Science

**New and Best of Backlist**

Spring / Summer 2024



### AI Needs You – How We Can Change AI's Future and Save Our Own

Verity Harding  
9780691244877

£20.00 • \$24.95 • Hardcover

Computers / Artificial Intelligence

March 2024

Princeton University Press

#### A humanist manifesto for the age of AI

Artificial intelligence may be the most transformative technology of our time. As AI's power grows, so does the need to figure out what—and who—this technology is really for. *AI Needs You* argues that it is critical for society to take the lead in answering this urgent question and ensuring that AI fulfills its promise.

Verity Harding draws inspiring lessons from the histories of three twentieth-century tech revolutions—the space race, in vitro fertilization, and the internet—to empower each of us to join the conversation about AI and its possible futures. Sharing her perspective as a leading insider in technology and politics, she rejects the dominant narrative, which often likens AI's advent to that of the atomic bomb. History points the way to an achievable future in which democratically determined values guide AI to be peaceful in its intent; to embrace limitations; to serve purpose, not profit; and to be firmly rooted in societal trust.

*AI Needs You* gives us hope that we, the people, can imbue AI with a deep intentionality that reflects our best values, ideals, and interests, and that serves the public good. AI will permeate our lives in unforeseeable ways, but it is clear that the shape of AI's future—and of our own—cannot be left only to those building it. It is up to us to guide this technology away from our worst fears and toward a future that we can trust and believe in.



### The Beauty of Falling – A Life in Pursuit of Gravity

Claudia de Rham  
9780691237480

£20.00 • \$27.95 • Hardcover

Science / Physics / Gravity

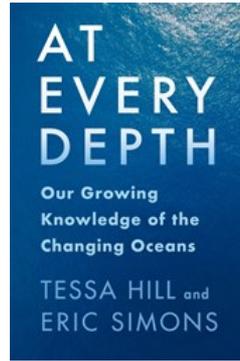
April 2024

Princeton University Press

#### A world-renowned physicist seeks gravity's true nature and finds wisdom in embracing its force in her life

Claudia de Rham has been playing with gravity her entire life. As a diver, experimenting with her body's buoyancy in the Indian Ocean. As a pilot, soaring over Canadian waterfalls on dark mornings before beginning her daily scientific research. As an astronaut candidate, dreaming of the experience of flying free from Earth's pull. And as a physicist, discovering new sides to gravity's irresistible personality by exploring the limits of Einstein's general theory of relativity. In *The Beauty of Falling*, de Rham shares captivating stories about her quest to gain intimacy with gravity, to understand both its feeling and fundamental nature. Her life's pursuit led her from a twist of fate that snatched away her dream of becoming an astronaut to an exhilarating breakthrough at the very frontiers of gravitational physics.

While many of us presume to know gravity quite well, the brightest scientists in history have yet to fully answer the simple question: what exactly is gravity? De Rham reveals how great minds—from Newton and Einstein to Stephen Hawking, Andrea Ghez, and Roger Penrose—led her to the edge of knowledge about this fundamental force. She found hints of a hidden side to gravity at the particle level where Einstein's theory breaks down, leading her to develop a new theory of "massive gravity." De Rham shares how her life's path turned from a precipitous fall to an exquisite flight toward the discovery of something entirely new about our surprising, gravity-driven universe.



### At Every Depth – Our Growing Knowledge of the Changing Oceans

Tessa Hill  
9780231199704

£28.00 • \$32.95 • Hardcover

Nature / Ecosystems & Habitats / Oceans & Seas

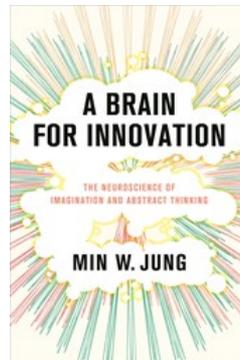
Seas

March 2024

Columbia University Press

The world's oceans are changing at a drastic pace. Beneath the waves and along the coasts, climate change and environmental degradation have spurred the most radical transformations in human history. In response, the people who know the ocean most intimately are taking action for the sake of our shared future. Community scientists track species in California tidepools. Researchers dive into the waters around Sydney to replant kelp forests. Scientists and First Nations communities collaborate to restore clam gardens in the Pacific Northwest.

In *At Every Depth*, the oceanographer Tessa Hill and the science journalist Eric Simons profile these and other efforts to understand and protect marine environments, taking readers to habitats from shallow tidepools to the deep sea. They delve into the many human connections to the ocean—how people live with and make their living from the waters—journeying to places as far-flung as coral reefs, the Great Pacific Garbage Patch, and the Arctic and Antarctic poles. *At Every Depth* shares the stories of people from all walks of life, including scientists, coastal community members, Indigenous people, shellfish farmers, and fisheries workers. It brings together varied viewpoints, showing how scientists' research and local and Indigenous knowledge can complement each other to inform a more sustainable future. Poignantly written and grounded in science, this book offers a narrative perspective on the changing oceans, letting us see how our relationships to the oceans are changing too.



### A Brain for Innovation – The Neuroscience of Imagination and Abstract Thinking

Min W. Jung  
9780231213363

£30.00 • \$35.00 • Hardcover

Science / Life Sciences / Neuroscience

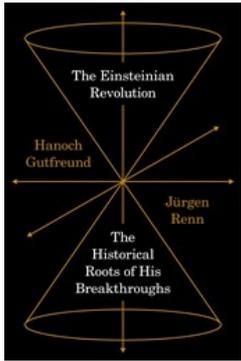
January 2024

Columbia University Press

What sets humans apart from other animals? Perhaps more than anything else, it is the capacity for innovation. The accumulation of discoveries throughout history, big and small, has enabled us to build global civilizations and gain power to shape our environment. But what makes humans as a species so innovative?

Min W. Jung offers a new understanding of the neural basis of innovation in terms of humans' exceptional capacity for imagination and high-level abstraction. He provides an engaging account of recent advances in neuroscience that have shed light on the neural underpinnings of these profoundly important abilities. Jung examines key discoveries concerning the hippocampus and neural circuits that have demystified the processes underlying imagination and abstract thinking. He also considers how these capacities might have evolved as well as possible futures for intelligence.

Bringing together disparate findings in neuroscience, psychology, anthropology, and artificial intelligence, *A Brain for Innovation* develops a unified perspective on the mechanisms of imagination, abstract thought, and creativity. Presenting cutting-edge neuroscientific research in a way that is accessible to readers without a background in the subject, this book is essential reading for anyone interested in the biological basis of one of the most fundamental aspects of human nature.



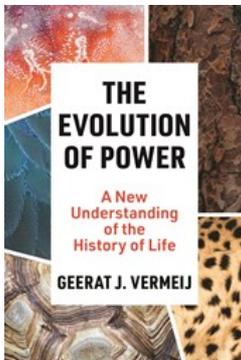
### The Einsteinian Revolution – The Historical Roots of His Breakthroughs

Jürgen Renn  
9780691168760  
£28.00 • \$32.00 • Hardcover  
Science / History  
January 2024  
Princeton University Press

#### How the Einsteinian revolution can be understood as the result of a long-term evolution of science

The revolution that emerged from Albert Einstein's work in the early twentieth century transformed our understanding of space, time, motion, gravity, matter, and radiation. Beginning with Einstein's miracle year of 1905 and continuing through his development of the theory of general relativity, Einstein spurred a revolution that continues to reverberate in modern-day physics. In *The Einsteinian Revolution*, Hanoch Gutfreund and Jürgen Renn trace the century-long transformation of classical physics and argue that the revolution begun by Einstein was in fact the result of a long-term evolution. Describing the origins and context of Einstein's innovative research, Gutfreund and Renn work to dispel the popular myth of Einstein as a lone genius who brought about a revolution in physics through the power of his own pure thought. We can only understand the birth of modern physics, they say, if we understand the long history of the evolution of knowledge.

Gutfreund and Renn outline the essential structures of the knowledge system of classical physics on which Einstein drew. Examining Einstein's discoveries from 1905 onward, they describe the process by which new concepts arose and the basis of modern physics emerged. These transformations continued, eventually resulting in the establishment of quantum physics and general relativity as the two major conceptual frameworks of modern physics—and its two unreconciled theoretical approaches. Gutfreund and Renn note that Einstein was dissatisfied with this conceptual dichotomy and began a search for a unified understanding of physics—a quest that continued for the rest of his life.



### The Evolution of Power – A New Understanding of the History of Life

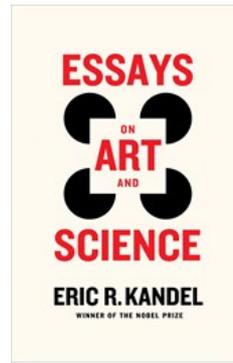
Geerat Vermeij  
9780691250410  
£25.00 • \$29.95 • Hardcover  
Science / Life Sciences / Evolution  
January 2024  
Princeton University Press

#### A sweeping new account of the role of power in the evolution of all life on Earth

Power has many dimensions, from individual attributes such as strength and speed to the collective advantages of groups. *The Evolution of Power* takes readers on a breathtaking journey across history and the natural world, revealing how the concept of power unifies a vast range of phenomena in the evolution of life—and how natural selection has placed humanity and the planet itself on a trajectory of ever-increasing power.

Drawing on evidence from fossils, living organisms, and contemporary society, Geerat Vermeij documents increases in power at all scales, from body size, locomotor performance, and the use of force in competition to efficiency in production and consumption within ecosystems. He shows how power—which he defines as the rate at which organisms acquire and apply energy—is tied to the emergence of cooperation, and how the modern economy, which for the first time has established a monopoly over the biosphere by a single species, is a continuation of evolutionary trends stretching back to the dawn of life. Vermeij persuasively argues that we can find solutions to the many problems arising from this extreme concentration of power by broadening our exclusively human-centered perspective.

A masterful work by one of today's most innovative and forward-thinking naturalists, *The Evolution of Power* offers a new understanding of our place in the grand sweep of evolutionary history.



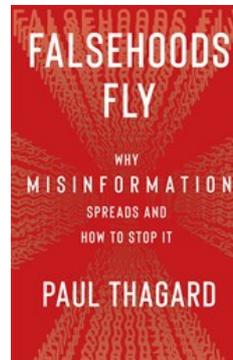
### Essays on Art and Science

Eric R. Kandel  
9780231212564  
£22.00 • \$26.95 • Hardcover  
Science / Essays  
April 2024  
Columbia University Press

When we view a work of art, we often experience an emotional response, but the causes of our reactions are complex. Our knowledge of why we respond to art as we do is rooted in science—in psychology and biology. Eric R. Kandel traces the origins of this understanding to early twentieth-century Vienna, which gave rise to the concept of the "beholder's share," the realization that art is incomplete without the perceptual and emotional involvement of the viewer—that is, without our responses to it.

But what causes our response? Our brain is a creativity machine that brings to bear on any image—including a painting—certain innate, universal processes related to sensory perception as well as higher-order processes related to our personal experiences, memories, and emotions. Understanding how these unconscious processes in the brain interact to create the beholder's share is one of the great challenges currently confronting brain science.

The essays on art and science in this book vary widely in subject matter, including the angst-ridden portraits of Soutine, conflicting views of women's sexuality, Cubism's challenge to our innate visual processes, and why we react differently to abstract versus figurative art. But each essay focuses on the interaction of art and science. Woven throughout are the many notable scientists, art historians, artists, and others, both Jewish and non-Jewish, who contributed to our understanding of how we experience art.



### Falsehoods Fly – Why Misinformation Spreads and How to Stop It

Paul Thagard  
9780231213950  
£28.00 • \$25.00 • Paperback  
Science / Cognitive Science  
March 2024  
Columbia University Press

Misinformation is one of the twenty-first century's greatest challenges, a peril to democracy, peace, science, and public health. Yet we lack a clear understanding of what makes misinformation so potent and why it can spread so rapidly. In *Falsehoods Fly*, a leading cognitive scientist and philosopher offers a new framework for recognizing and countering misleading claims by exploring the ways that information works—and breaks down.

Paul Thagard examines the dangers of misinformation on COVID-19, climate change, conspiracy theories, inequality, and the Russian invasion of Ukraine. He argues that effective responses to these problems require understanding how information is generated and spread. Bringing together empirical findings about the psychological and social mechanisms that drive cognitive errors with philosophical accounts of critical thinking, Thagard develops an innovative theory of how we gain information. Grasping how the generation and transmission of knowledge can fail helps us find ways to repair it and provides tools for converting misinformation into facts. Offering a deep and rich account of the nature and workings of information, *Falsehoods Fly* provides practical, concrete strategies to stop the creation and spread of misinformation.



### Father Time – A Natural History of Men and Babies

Sarah Blaffer Hrdy  
9780691238777

£25.00 • \$29.95 • Hardcover  
Science / Life Sciences / Biology  
May 2024  
Princeton University Press

**A sweeping account of male nurturing, explaining how and why men are biologically transformed when they care for babies**

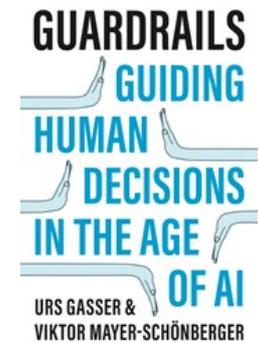
It has long seemed self-evident that women care for babies and men do other things. Hasn't it always been so? When evolutionary science came along, it rubber-stamped this venerable division of labor: mammalian males evolved to compete for status and mates, while females were purpose-built to gestate, suckle, and otherwise nurture the victors' offspring. But come the twenty-first century, increasing numbers of men are tending babies, sometimes right from birth. How can this be happening? Puzzled and dazzled by the tender expertise of new fathers around the world—several in her own family—celebrated evolutionary anthropologist and primatologist Sarah Blaffer Hrdy set out to trace the deep history of male nurturing and explain a surprising departure from everything she had assumed to be “normal.”

In *Father Time*, Hrdy draws on a wealth of research to argue that this ongoing transformation in men is not only cultural, but profoundly biological. Men in prolonged intimate contact with babies exhibit responses nearly identical to those in the bodies and brains of mothers. They develop caring potential few realized men possessed. In her quest to explain how men came to nurture babies, Hrdy travels back through millions of years of human, primate, and mammalian evolution, then back further still to the earliest vertebrates—all while taking into account recent economic and social trends and technological innovations and incorporating new findings from neuroscience, genetics, endocrinology, and more. The result is a masterful synthesis of evolutionary and historical perspectives that expands our understanding of what it means to be a man—and what the implications might be for society and our species.

### Guardrails – Guiding Human Decisions in the Age of AI

Urs Gasser  
9780691150680

£22.00 • \$27.95 • Hardcover  
Social Science / Technology Studies  
March 2024  
Princeton University Press

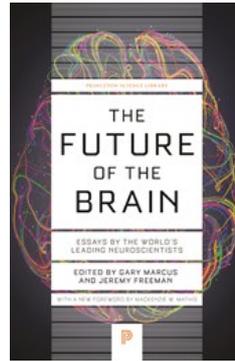


**How society can shape individual actions in times of uncertainty**

When we make decisions, our thinking is informed by societal norms, “guardrails” that guide our decisions, like the laws and rules that govern us. But what are good guardrails in today's world of overwhelming information flows and increasingly powerful technologies, such as artificial intelligence? Based on the latest insights from the cognitive sciences, economics, and public policy, *Guardrails* offers a novel approach to shaping decisions by embracing human agency in its social context.

In this visionary book, Urs Gasser and Viktor Mayer-Schönberger show how the quick embrace of technological solutions can lead to results we don't always want, and they explain how society itself can provide guardrails more suited to the digital age, ones that empower individual choice while accounting for the social good, encourage flexibility in the face of changing circumstances, and ultimately help us to make better decisions as we tackle the most daunting problems of our times, such as global injustice and climate change.

Whether we change jobs, buy a house, or quit smoking, thousands of decisions large and small shape our daily lives. Decisions drive our economies, seal the fate of democracies, create war or peace, and affect the well-being of our planet. *Guardrails* challenges the notion that technology should step in where our own decision making fails, laying out a surprisingly human-centered set of principles that can create new spaces for better decisions and a more equitable and prosperous society.



### The Future of the Brain – Essays by the World's Leading Neuroscientists

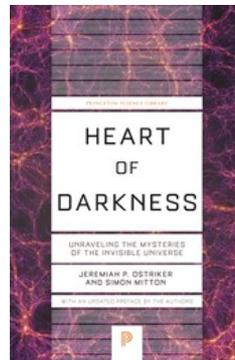
Gary Marcus  
9780691258829

£15.99 • \$18.95 • Paperback  
Science / Life Sciences / Neuroscience  
June 2024  
Princeton University Press

**The world's top experts take readers to the very frontiers of brain science. Includes a chapter by 2014 Nobel laureates May-Britt Moser and Edvard Moser**

An unprecedented look at the quest to unravel the mysteries of the human brain, *The Future of the Brain* takes readers to the absolute frontiers of science. Original essays by leading researchers such as Christof Koch, George Church, Olaf Sporns, and May-Britt and Edvard Moser describe the spectacular technological advances that will enable us to map the more than eighty-five billion neurons in the brain, as well as the challenges that lie ahead in understanding the anticipated deluge of data and the prospects for building working simulations of the human brain. A must-read for anyone trying to understand ambitious new research programs such as the Obama administration's BRAIN Initiative and the European Union's Human Brain Project, *The Future of the Brain* sheds light on the breathtaking implications of brain science for medicine, psychiatry, and even human consciousness itself.

Contributors include: Misha Ahrens, Ned Block, Matteo Carandini, George Church, John Donoghue, Chris Eliasmith, Simon Fisher, Mike Hawrylycz, Sean Hill, Christof Koch, Leah Krubitzer, Michel Maharbiz, Kevin Mitchell, Edvard Moser, May-Britt Moser, David Poeppel, Krishna Shenoy, Olaf Sporns, Anthony Zador.



### Heart of Darkness – Unraveling the Mysteries of the Invisible Universe

Jeremiah P. Ostriker  
9780691258935

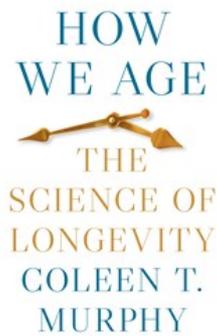
£15.99 • \$18.95 • Paperback  
Science / Space Science / Astronomy  
June 2024  
Princeton University Press

**Humanity's ongoing quest to unlock the secrets of dark matter and dark energy**

*Heart of Darkness* describes the incredible saga of humankind's quest to unravel the deepest secrets of the universe. Over the past forty years, scientists have learned that two little-understood components—dark matter and dark energy—comprise most of the known cosmos, explain the growth of all cosmic structure, and hold the key to the universe's fate. The story of how evidence for the so-called “Lambda-Cold Dark Matter” model of cosmology has been gathered by generations of scientists throughout the world is told here by one of the pioneers of the field, Jeremiah Ostriker, and his coauthor Simon Mitton.

From humankind's early attempts to comprehend Earth's place in the solar system, to astronomers' exploration of the Milky Way galaxy and the realm of the nebulae beyond, to the detection of the primordial fluctuations of energy from which all subsequent structure developed, this book explains the physics and the history of how the current model of our universe arose and has passed every test hurled at it by the skeptics. Throughout this rich story, an essential theme is emphasized: how three aspects of rational inquiry—the application of direct measurement and observation, the introduction of mathematical modeling, and the requirement that hypotheses should be testable and verifiable—guide scientific progress and underpin our modern cosmological paradigm.

This monumental puzzle is far from complete, however, as scientists confront the mysteries of the ultimate causes of cosmic structure formation and the real nature and origin of dark matter and dark energy.



### How We Age – The Science of Longevity

Coleen T. Murphy  
9780691182636  
£30.00 • \$35.00 • Hardcover  
Science / Life Sciences / Biology  
January 2024  
Princeton University Press

#### How recent breakthroughs in longevity research offer clues about human aging

All of us would like to live longer, or to slow the debilitating effects of age. In *How We Age*, Coleen Murphy shows how recent research on longevity and aging may be bringing us closer to this goal. Murphy, a leading scholar of aging, explains that the study of model systems, particularly simple invertebrate animals, combined with breakthroughs in genomic methods, have allowed scientists to probe the molecular mechanisms of longevity and aging. Understanding the fundamental biological rules that govern aging in model systems provides clues about how we might slow human aging, which could lead in turn to new therapeutics and treatments for age-related disease.

Among other vivid examples, Murphy describes research that shows how changing a single gene in the nematode worm *C. elegans* doubles its lifespan, extending not only the end of life but also the youthful, healthy part of life. Drawing on work in her own lab as well as other recent research, Murphy chronicles the history and current state of the field, explaining longevity's links to reproduction and mating, sensory and cognitive function, inheritances from our ancestors, and the gut microbiome. Written with clarity and wit, *How We Age* provides a guide to the science: what we know about aging, how we know what we know, and what we can do with this new knowledge.



### The Last of Its Kind – The Search for the Great Auk and the Discovery of Extinction

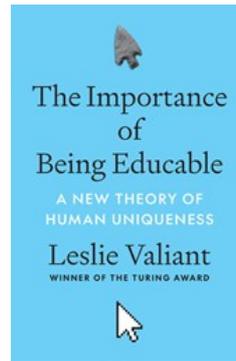
Gísli Pálsson  
9780691230986  
£22.00 • \$27.95 • Hardcover  
Science / Natural History  
April 2024  
Princeton University Press

#### How an iconic bird's final days exposed the reality of human-caused extinction

The great auk is one of the most tragic and documented examples of extinction. A flightless bird that bred primarily on the remote islands of the North Atlantic, the last of its kind were killed in Iceland in 1844. Gísli Pálsson draws on firsthand accounts from the Icelanders who hunted the last great auks to bring to life a bygone age of Victorian scientific exploration while offering vital insights into the extinction of species.

Pálsson vividly recounts how British ornithologists John Wolley and Alfred Newton set out for Iceland to collect specimens only to discover that the great auks were already gone. At the time, the Victorian world viewed extinction as an impossibility or trivialized it as a natural phenomenon. Pálsson chronicles how Wolley and Newton documented the fate of the last birds through interviews with the men who killed them, and how the naturalists' Icelandic journey opened their eyes to the disappearance of species as a subject of scientific concern—and as something that could be caused by humans.

Blending a richly evocative narrative with rare, unpublished material as well as insights from ornithology, anthropology, and Pálsson's own North Atlantic travels, *The Last of Its Kind* reveals how the saga of the great auk opens a window onto the human causes of mass extinction.



### The Importance of Being Educable – A New Theory of Human Uniqueness

Leslie Valiant  
9780691230566  
£25.00 • \$29.95 • Hardcover  
Science / Life Sciences / Neuroscience  
April 2024  
Princeton University Press

#### In the age of AI, why our future depends on better understanding what makes us human

We are at a crossroads in history. If we hope to share our planet successfully with one another and the AI systems we are creating, we must reflect on who we are, how we got here, and where we are heading. *The Importance of Being Educable* puts forward a provocative new exploration of the extraordinary facility of humans to absorb and apply knowledge. The remarkable “educability” of the human brain can be understood as an information processing ability. It sets our species apart, enables the civilization we have, and gives us the power and potential to set our planet on a steady course. Yet it comes hand in hand with an insidious weakness. While we can readily absorb entire systems of thought about worlds of experience beyond our own, we struggle to judge correctly what information we should trust.

In this visionary book, Leslie Valiant argues that understanding the nature of our own educability is crucial to safeguarding our future. After breaking down how we process information to learn and apply knowledge, and drawing comparisons with other animals and AI systems, he explains why education should be humankind's central preoccupation.

Will the unique capability that has been so foundational to our achievements and civilization continue to drive our progress, or will we fall victim to our vulnerabilities? If we want to play to our species' great strength and protect our collective future, we must better understand and prioritize the vital importance of being educable. This book provides a road map.



### Lichenpedia – A Brief Compendium

Kay Hurley  
9780691239903  
£10.99 • \$17.95 • Hardcover  
Nature / Plants  
May 2024  
Princeton University Press

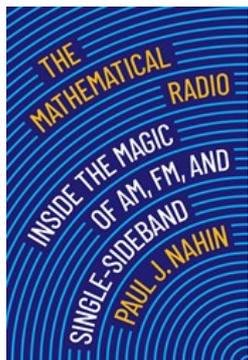
#### An illustrated mini-encyclopedia about the weird and wonderful world of lichens

*Lichenpedia* is a delightfully entertaining and beautifully illustrated A–Z treasury about the strange, obscure, and remarkable world of lichens, from their unique and essential roles in nature and the ways they are used in dyeing, brewing, and drug-making to how they have inspired writers and artists, from Henry David Thoreau to modern painters.

In 100 brief entries written in a vivid, lively style, Kay Hurley introduces key aspects of lichen biology, environmental roles, emerging uses, scientific history, and myth. She describes the variety of forms that lichens take, from leafy to filamentous to things reminiscent of skin diseases, with imaginative names like witch's hair. She explains the surprising ways that birds and beasts—from reindeer and moose down to tiny tardigrades—use lichens, and how lichens survive in extreme environments, from deserts to Antarctica to outer space. Hurley also introduces some of the innovators who have advanced the knowledge of lichens, from the ancient Greek philosopher Theophrastus to today's professional lichenologists.

With charming drawings by Susan Adele Edwards, *Lichenpedia* promises to put you in touch with the natural world in a new way by opening your eyes to these vital organisms, which are all around us, hidden in plain sight.

- Features a cloth cover with an elaborate foil-stamped design



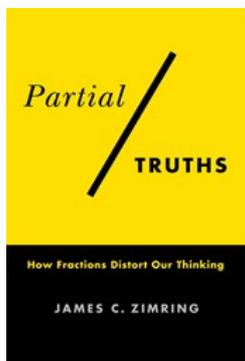
### The Mathematical Radio – Inside the Magic of AM, FM, and Single-Sideband

Paul J. Nahin  
9780691235318  
£22.00 • \$26.95 • Hardcover  
Technology & Engineering / Radio  
March 2024  
Princeton University Press

#### How a modern radio works, told through mathematics, history, and selected puzzles

The modern radio is a wonder, and behind that magic is mathematics. In *The Mathematical Radio*, Paul Nahin explains how radios work, deploying mathematics and historical discussion, accompanied by a steady stream of intriguing puzzles for math buffs to ponder. Beginning with oscillators and circuits, then moving on to AM, FM, and single-sideband radio, Nahin focuses on the elegant mathematics underlying radio technology rather than the engineering. He explores and explains more than a century of key developments, placing them in historical and technological context.

Nahin, a prolific author of books on math for the general reader, describes in fascinating detail the mathematical underpinnings of a technology we use daily. He explains and solves, for example, Maxwell's equations for the electromagnetic field. Readers need only a familiarity with advanced high school-level math to follow Nahin's mathematical discussions. Writing with the nonengineer in mind, Nahin examines topics including impulses in time and frequency, spectrum shifting at the transmitter, the superheterodyne, the physics of single-sideband radio, and FM sidebands. Chapters end with "challenge problems" and an appendix offers solutions, partial answers, and hints. Readers will come away with a new appreciation for the beauty of even the most useful mathematics.

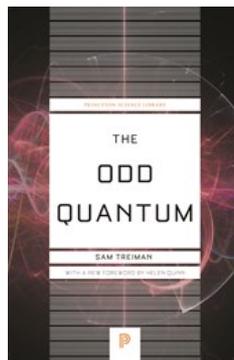


### Partial Truths – How Fractions Distort Our Thinking

James C. Zimring  
9780231216623  
£17.99 • \$22.00 • Paperback  
Mathematics / Probability & Statistics  
January 2024  
Columbia University Press

A fast-food chain once tried to compete with McDonald's quarter-pounder by introducing a third-pound hamburger—only for it to flop when consumers thought a third pound was less than a quarter pound because three is less than four. Separately, a rash of suicides by teenagers who played Dungeons and Dragons caused a panic in parents and the media. They thought D&D was causing teenage suicides—when in fact teenage D&D players died by suicide at a much lower rate than the national average. Errors of this type can be found from antiquity to the present, from the Peloponnesian War to the COVID-19 pandemic. How and why do we keep falling into these traps?

James C. Zimring argues that many of the mistakes that the human mind consistently makes boil down to misperceiving fractions. We see slews of statistics that are essentially fractions, such as percentages, probabilities, frequencies, and rates, and we tend to misinterpret them. Sometimes bad actors manipulate us by cherry-picking data or distorting how information is presented; other times, sloppy communicators inadvertently mislead us. In many cases, we fool ourselves and have only our own minds to blame. Zimring also explores the counterintuitive reason that these flaws might benefit us, demonstrating that individual error can be highly advantageous to problem solving by groups. Blending key scientific research in cognitive psychology with accessible real-life examples, *Partial Truths* helps readers spot the fallacies lurking in everyday information, from politics to the criminal justice system, from religion to science, from business strategies to New Age culture.



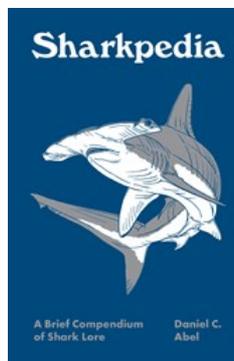
### The Odd Quantum

Sam Treiman  
9780691254364  
£17.99 • \$21.95 • Paperback  
Science / Physics  
January 2024  
Princeton University Press

#### An acclaimed physicist's accessible yet rigorous introduction to quantum mechanics for nonspecialists

This is a rare and much-needed book: a concise but comprehensive account of quantum mechanics for popular science readers written by a respected physicist. Sam Treiman—who was internationally renowned for his work in particle physics—makes quantum mechanics accessible to nonspecialists. Combining mastery of the material with clear, elegant prose and infectious enthusiasm, he conveys the substance, methods, and profound oddities of the field.

Treiman begins with an overview of quantum mechanics. He sketches the early development of the field by Einstein, Bohr, Heisenberg, Schrödinger, and others, and he makes clear how the quantum outlook flies in the face of common sense. As he explains, the quantum world is intrinsically probabilistic. For example, a particle is not in general in some particular place at a given instant, nor does it have a definite momentum. According to the Heisenberg uncertainty principle, there is a limit to how well both location and momentum can be specified simultaneously. In addition, particles can move through barriers and otherwise move in regions of space that are forbidden by classical mechanics. If a particle has a choice of different paths, it pursues all of them at once. Particles display wave-like characteristics and waves show particle-like characteristics. Treiman pays special attention to the more fundamental wave outlook and its expression in quantum field theory. He deals here with the remarkable fact that all the particles of a given species are strictly identical, and with the unnerving fact that particles can be created and destroyed. As Treiman introduces us to these and other wonders, he also touches—without resolution—on some of the deep philosophical problems of quantum mechanics, notably how probabilities become facts.



### Sharkpedia – A Brief Compendium of Shark Lore

Daniel C. Abel  
9780691252612  
£10.99 • \$17.95 • Hardcover  
Nature / Animals / Marine Life  
May 2024  
Princeton University Press

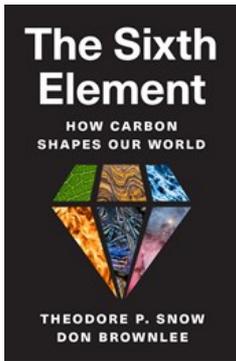
#### A fun, pocket-size A–Z treasury about sharks, featuring fascinating, little-known facts and captivating illustrations

*Sharkpedia* is an entertaining and enlightening celebration of sharks featuring close to 100 entries, based on the latest knowledge and enriched by original illustrations. Avoiding tired factoids, shark authority Daniel Abel gives new bite to essential information about sharks, including their adaptations as top predators, 450-million-year evolution, behavioral complexity, ecological importance, existential threats, and often sensationalized appearances in popular culture, from *Jaws* to Shark Week.

The notion that sharks are insatiable killing machines is a toothless myth—yet the fear of shark attacks still holds on to many people like a set of locked jaws. *Sharkpedia* reveals that sharks are much less to be feared—and much more interesting, complicated, and important—than many realize. Filled with compelling stories, *Sharkpedia* debunks shark myths (for example, that sharks are large and coastal when in fact most are small and inhabit the deep sea), describes their lives (where and how long they live, how many offspring they have, what they eat, and how their bodies function), introduces a variety of iconic and obscure species (such as the Happy Eddie Shyshark), explores our love/hate relationship with sharks, and much more.

With charming drawings by leading shark artist Marc Dando, *Sharkpedia* is a scientific and cultural treasure trove that will leave you with new insights about these remarkable animals. Dive in!

- Features a cloth cover with an elaborate foil-stamped design



### The Sixth Element – How Carbon Shapes Our World

Theodore P. Snow

9780691125886

£22.00 • \$27.95 • Hardcover

Science / Space Science / Astronomy

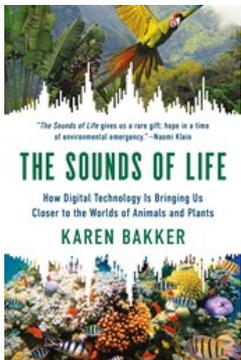
May 2024

Princeton University Press

#### A cosmic perspective on carbon—its importance in the universe and our lives

When we think of carbon, we might first think of a simple element near the top of the periodic table: symbol C, atomic number 6. Alternatively, we might think of something more tangible—a sooty piece of coal or a sparkling diamond, both made of carbon. Or, as Earth's temperature continues to rise alarmingly, we might think of the role carbon plays in climate change. Yet carbon's story begins long ago, far from earthly concerns. In *The Sixth Element*, astronomers Theodore Snow and Don Brownlee tell the story of carbon from a cosmic perspective—how it was born in the fiery furnaces of stars, what special chemical and physical properties it has, and how it forms the chemical backbone of the planets and all life as we know it. Foundational to every part of our lives, from our bodies to the food, tools, and atmosphere that sustain our existence, carbon is arguably humankind's most important element.

Snow and Brownlee offer readers the ideal introduction to the starry element that made our world possible and shapes our lives. They first discuss carbon's origin, discovery, and unique ability to bond with other elements and form countless molecules. Next, they reveal carbon's essential role in the chemical evolution of the universe and the formation and evolution of galaxies, stars, planets, and life, and then, more generally, its technological uses and its influence on Earth's climate. Bringing readers on a historical, scientific, and cross-disciplinary journey, *The Sixth Element* illuminates the cosmic wonder that is carbon.



### The Sounds of Life – How Digital Technology Is Bringing Us Closer to the Worlds of Animals and Plants

Karen Bakker

9780691240978

£17.99 • \$21.95 • Paperback

Nature / Animals

May 2024

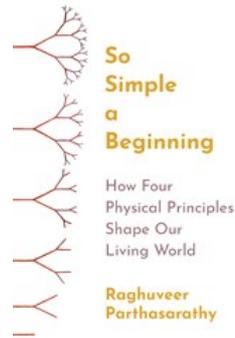
Princeton University Press

#### An amazing journey into the hidden realm of nature's sounds

The natural world teems with remarkable conversations, many beyond human hearing range. Scientists are using groundbreaking digital technologies to uncover these astonishing sounds, revealing vibrant communication among our fellow creatures across the Tree of Life.

At once meditative and scientific, *The Sounds of Life* shares fascinating and surprising stories of nonhuman sound, interweaving insights from technological innovation and traditional knowledge. We meet scientists using sound to protect and regenerate endangered species from the Great Barrier Reef to the Arctic and the Amazon. We discover the shocking impacts of noise pollution on both animals and plants. We learn how artificial intelligence can decode nonhuman sounds, and meet the researchers building dictionaries in East African Elephant and Sperm Whalish. At the frontiers of innovation, we explore digitally mediated dialogues with bats and honeybees. Technology often distracts us from nature, but what if it could reconnect us instead?

*The Sounds of Life* offers hope for environmental conservation and affirms humanity's relationship with nature in the digital age. After learning about the unsuspected wonders of nature's sounds, we will never see walks outdoors in the same way again.



### So Simple a Beginning – How Four Physical Principles Shape Our Living World

Raghuvveer Parthasarathy

9780691258676

£18.99 • \$22.95 • Paperback

Science / Life Sciences / Biophysics

May 2024

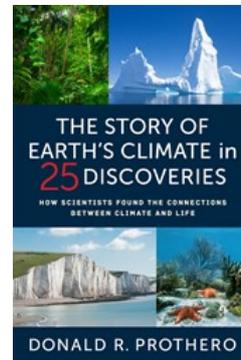
Princeton University Press

#### A biophysicist reveals the hidden unity behind nature's breathtaking complexity

The form and function of a sprinting cheetah are quite unlike those of a rooted tree. A human being is very different from a bacterium or a zebra. The living world is a realm of dazzling variety, yet a shared set of physical principles shapes the forms and behaviors of every creature in it. *So Simple a Beginning* shows how the emerging new science of biophysics is transforming our understanding of life on Earth and enabling potentially lifesaving but controversial technologies such as gene editing, artificial organ growth, and ecosystem engineering.

Raghuvveer Parthasarathy explains how four basic principles—self-assembly, regulatory circuits, predictable randomness, and scaling—shape the machinery of life on scales ranging from microscopic molecules to gigantic elephants. He describes how biophysics is helping to unlock the secrets of a host of natural phenomena, such as how your limbs know to form at the proper places, and why humans need lungs but ants do not. Parthasarathy explores how the cutting-edge biotechnologies of tomorrow could enable us to alter living things in ways both subtle and profound.

Featuring dozens of original watercolors and drawings by the author, this sweeping tour of biophysics offers astonishing new perspectives on how the wonders of life can arise from so simple a beginning.



### The Story of Earth's Climate in 25 Discoveries – How Scientists Found the Connections Between Climate and Life

Donald R. Prothero

9780231203586

£32.00 • \$38.00 • Hardcover

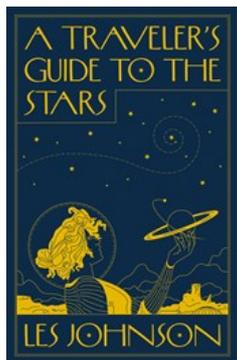
Science / Environmental Science

February 2024

Columbia University Press

Over 4.5 billion years, Earth's climate has transformed tremendously. Before our more temperate recent past, the planet swung from one extreme to another—from a greenhouse world of sweltering temperatures and high sea levels to a "snowball earth" in which glaciers reached the equator. During this history, we now know, living things and the climate have always influenced and even shaped each other. But the climate has never changed as rapidly or as drastically as it has since the Industrial Revolution.

In this lively and entertaining book, Donald R. Prothero explores the astonishing connections between climate and life through the ages, telling the remarkable stories of the scientists who made crucial discoveries. Journeying through the intertwined evolution of climate and life, he tackles questions such as: Why do we have phytoplankton to thank for the air we breathe? What kind of climate was necessary for the rise of the dinosaurs—or the mammals, their successors? When and how have climatic changes caused mass extinctions? Prothero concludes with the Ice Ages and the Holocene, the role of climate in human history, and the perils of anthropogenic climate change. Understanding why the climate has changed in the past, this timely book shows, is essential to grasping the gravity of how radically human activity is altering the climate today.



### A Traveler's Guide to the Stars

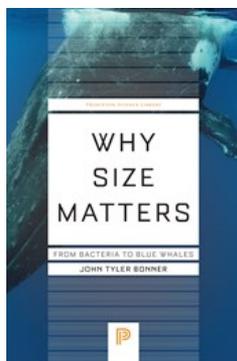
Les Johnson  
9780691258683  
£14.99 • \$18.95 • Paperback  
Science / Space Science  
July 2024  
Princeton University Press

#### A brief guide to the real science of interstellar travel

With known exoplanets now numbering in the thousands and initiatives like 100 Year Starship and Breakthrough Starshot advancing the idea of interstellar travel, the age-old dream of venturing forth into the cosmos and perhaps even colonizing distant worlds may one day become a reality. *A Traveler's Guide to the Stars* reveals how.

Les Johnson takes you on a thrilling tour of the physics and technologies that may enable us to reach the stars. He discusses the latest exoplanet discoveries, promising interstellar missions on the not-so-distant horizon, and exciting new developments in space propulsion, power, robotics, communications, and more. But interstellar travel will not be easy, and it is not for the faint of heart. Johnson describes the harsh and forbidding expanse of space that awaits us, and he addresses the daunting challenges—both human and technological—that we will need to overcome in order to realize tomorrow's possibilities.

*A Traveler's Guide to the Stars* is your passport to the next great frontier of human discovery, providing a rare inside look at the remarkable breakthroughs in science and technology that will help tomorrow's space travelers chart a course for the stars.



### Why Size Matters - From Bacteria to Blue Whales

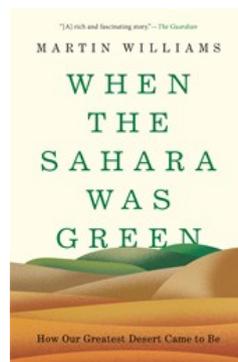
John Tyler Bonner  
9780691254401  
£13.99 • \$16.95 • Paperback  
Science / Life Sciences / Evolution  
January 2024  
Princeton University Press

John Tyler Bonner, one of our most distinguished and creative biologists, here offers a completely new perspective on the role of size in biology. In his hallmark friendly style, he explores the universal impact of being the right size. By examining stories ranging from Alice in Wonderland to Gulliver's Travels, he shows that humans have always been fascinated by things big and small. Why then does size always reside on the fringes of science and never on the center stage? Why do biologists and others ponder size only when studying something else—running speed, life span, or metabolism?

*Why Size Matters*, a pioneering book of big ideas in a compact size, gives size its due by presenting a profound yet lucid overview of what we know about its role in the living world. Bonner argues that size really does matter—that it is the supreme and universal determinant of what any organism can be and do. For example, because tiny creatures are subject primarily to forces of cohesion and larger beasts to gravity, a fly can easily walk up a wall, something we humans cannot even begin to imagine doing.

Bonner introduces us to size through the giants and dwarfs of human, animal, and plant history and then explores questions including the physics of size as it affects biology, the evolution of size over geological time, and the role of size in the function and longevity of living things.

As this elegantly written book shows, size affects life in its every aspect. It is a universal frame from which nothing escapes.



### When the Sahara Was Green - How Our Greatest Desert Came to Be

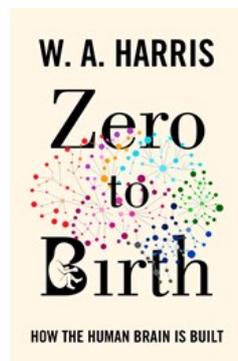
Martin Williams  
9780691253930  
£18.99 • \$22.95 • Paperback  
0  
January 2024  
Princeton University Press

#### The little-known history of how the Sahara was transformed from a green and fertile land into the largest hot desert in the world

The Sahara is the largest hot desert in the world, equal in size to China or the United States. Yet, this arid expanse was once a verdant, pleasant land, fed by rivers and lakes. The Sahara sustained abundant plant and animal life, such as Nile perch, turtles, crocodiles, and hippos, and attracted prehistoric hunters and herders. What transformed this land of lakes into a sea of sands? *When the Sahara Was Green* describes the remarkable history of Earth's greatest desert—including why its climate changed, the impact this had on human populations, and how scientists uncovered the evidence for these extraordinary events.

From the Sahara's origins as savanna woodland and grassland to its current arid incarnation, Martin Williams takes us on a vivid journey through time. He describes how the desert's ancient rocks were first fashioned, how dinosaurs roamed freely across the land, and how it was later covered in tall trees. Along the way, Williams addresses many questions: Why was the Sahara previously much wetter, and will it be so again? Did humans contribute to its desertification? What was the impact of extreme climatic episodes—such as prolonged droughts—upon the Sahara's geology, ecology, and inhabitants? Williams also shows how plants, animals, and humans have adapted to the Sahara and what lessons we might learn for living in harmony with the harshest, driest conditions in an ever-changing global environment.

A valuable look at how an iconic region has changed over millions of years, *When the Sahara Was Green* reveals the desert's surprising past to reflect on its present, as well as its possible future.



### Zero to Birth - How the Human Brain Is Built

William A. Harris  
9780691253947  
£16.99 • \$19.95 • Paperback  
Science / Life Sciences / Neuroscience  
January 2024  
Princeton University Press

#### A revelatory tale of how the human brain develops, from conception to birth and beyond

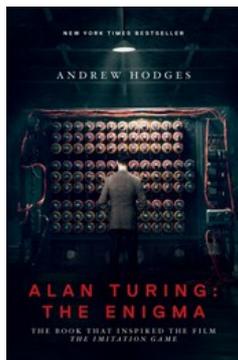
By the time a baby is born, its brain is equipped with billions of intricately crafted neurons wired together through trillions of interconnections to form a compact and breathtakingly efficient supercomputer. *Zero to Birth* takes you on an extraordinary journey to the very edge of creation, from the moment of an egg's fertilization through each step of a human brain's development in the womb—and even a little beyond.

As pioneering experimental neurobiologist W. A. Harris guides you through the process of how the brain is built, he takes up the biggest questions that scientists have asked about the developing brain, describing many of the thrilling discoveries that were foundational to our current understanding. He weaves in a remarkable evolutionary story that begins billions of years ago in the Proterozoic eon, when multicellular animals first emerged from single-cell organisms, and reveals how the growth of a fetal brain over nine months reflects the brain's evolution through the ages. Our brains have much in common with those of other animals, and Harris offers an illuminating look at how comparative animal studies have been crucial to understanding what makes a human brain human.

An unforgettable chronicle of one of nature's greatest achievements, *Zero to Birth* describes how the brain's incredible feat of orchestrated growth ensures that every brain is unique, and how breakthroughs at the frontiers of science are helping us to decode many traits that only reveal themselves later in life.

# The University Press Group

Popular Science 2024



## Alan Turing – The Enigma – The Book That Inspired the Film The Imitation Game – Updated Edition

Andrew Hodges  
9780691164724  
£14.99 • \$17.95 • Paperback  
Biography & Autobiography / Science &  
Technology  
December 2014  
Princeton University Press

**A NEW YORK TIMES BESTSELLER**

The official book behind the Academy Award-winning film *The Imitation Game*, starring Benedict Cumberbatch and Keira Knightley

It is only a slight exaggeration to say that the British mathematician Alan Turing (1912–1954) saved the Allies from the Nazis, invented the computer and artificial intelligence, and anticipated gay liberation by decades—all before his suicide at age forty-one. This *New York Times*–bestselling biography of the founder of computer science, with a new preface by the author that addresses Turing's royal pardon in 2013, is the definitive account of an extraordinary mind and life.

Capturing both the inner and outer drama of Turing's life, Andrew Hodges tells how Turing's revolutionary idea of 1936—the concept of a universal machine—laid the foundation for the modern computer and how Turing brought the idea to practical realization in 1945 with his electronic design. The book also tells how this work was directly related to Turing's leading role in breaking the German Enigma ciphers during World War II, a scientific triumph that was critical to Allied victory in the Atlantic. At the same time, this is the tragic account of a man who, despite his wartime service, was eventually arrested, stripped of his security clearance, and forced to undergo a humiliating treatment program—all for trying to live honestly in a society that defined homosexuality as a crime.

The inspiration for a major motion picture starring Benedict Cumberbatch and Keira Knightley,



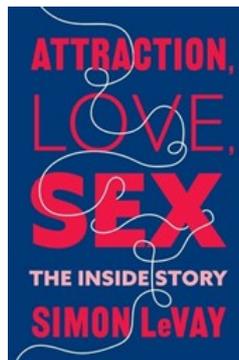
## A Brief Welcome to the Universe – A Pocket-Sized Tour

Neil deGrasse Tyson  
9780691219943  
£9.99 • \$14.95 • Paperback  
Science / Physics / Astrophysics  
September 2021  
Princeton University Press

**A pocket-style edition based on the *New York Times* bestseller**

*A Brief Welcome to the Universe* offers a breathtaking tour of the cosmos, from planets, stars, and galaxies to black holes and time loops. Bestselling authors and acclaimed astrophysicists Neil deGrasse Tyson, Michael A. Strauss, and J. Richard Gott take readers on an unforgettable journey of exploration to reveal how our universe actually works.

Propelling you from our home solar system to the outermost frontiers of space, this book builds your cosmic insight and perspective through a marvelously entertaining narrative. How do stars live and die? What are the prospects of intelligent life elsewhere in the universe? How did the universe begin? Why is it expanding and accelerating? Is our universe alone or part of an infinite multiverse? Exploring these and many other questions, this pocket-friendly book is your passport into the wonders of our evolving cosmos.



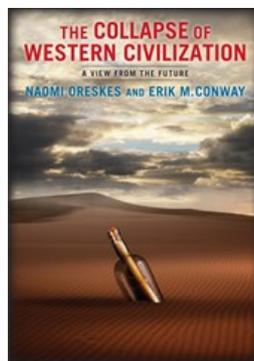
## Attraction, Love, Sex – The Inside Story

Simon LeVay  
9780231204507  
£28.00 • \$32.00 • Hardcover  
Science / Life Sciences / Evolution  
May 2023  
Columbia University Press

Sex, after hunger, may be the most powerful motivating force in our lives. It drives us to seek intimate contact with others and to form relationships that may be fleeting or lifelong, blissful or troubled. Yet many mysteries surround sex and sexuality: Why don't we reproduce by virgin birth? Why does so much of our sexual behavior have nothing to do with reproduction? Why isn't everyone heterosexual? How does the brain create sexual arousal? How do sexual kinks develop? Is porn harmful? What is the relationship between sex and love?

In *Attraction, Love, Sex*, the renowned scholar Simon LeVay introduces readers to a memorable cast of researchers trying to answer these questions and many more. A biologist dredges a New Zealand lake for asexual mud snails. Psychologists measure whether eating a good meal changes a man's idea of female beauty. Physiologists probe orifices with miniature toilet plungers and place lovers in brain scanners. Geneticists reconstruct the sex crimes of Genghis Khan. Neuroscientists create mice whose sexual behavior can be switched on and off. A zoologist traps and releases 260,000 voles and launches a new science of love.

LeVay distills vast expertise on the biology and psychology of sex into an engaging and easy-to-understand survey with scientific acumen, a critical eye, and a sense of humor. This book reveals how scientists are unraveling the secrets of sex and, in the process, shattering many traditional ideas and prejudices.

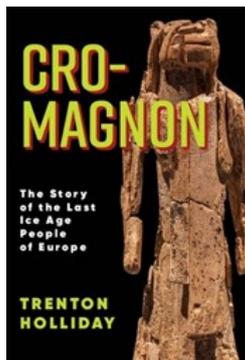


## The Collapse of Western Civilization – A View from the Future

Naomi Oreskes  
9780231169547  
£7.99 • \$9.95 • Paperback  
Science / Global Warming & Climate Change  
July 2014  
Columbia University Press

*The year is 2393, and the world is almost unrecognizable. Clear warnings of climate catastrophe went ignored for decades, leading to soaring temperatures, rising sea levels, widespread drought and—finally—the disaster now known as the Great Collapse of 2093, when the disintegration of the West Antarctica Ice Sheet led to mass migration and a complete reshuffling of the global order. Writing from the Second People's Republic of China on the 300th anniversary of the Great Collapse, a senior scholar presents a gripping and deeply disturbing account of how the children of the Enlightenment—the political and economic elites of the so-called advanced industrial societies—failed to act, and so brought about the collapse of Western civilization.*

In this haunting, provocative work of science-based fiction, Naomi Oreskes and Eric M. Conway imagine a world devastated by climate change. Dramatizing the science in ways traditional nonfiction cannot, the book reasserts the importance of scientists and the work they do and reveals the self-serving interests of the so-called "carbon combustion complex" that have turned the practice of science into political fodder. Based on sound scholarship and yet unafraid to speak boldly, this book provides a welcome moment of clarity amid the cacophony of climate change literature.



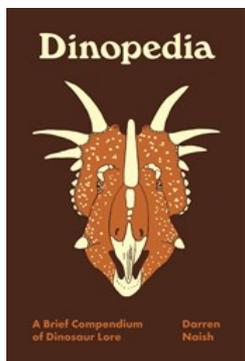
### Cro-Magnon – The Story of the Last Ice Age People of Europe

Trenton W. Holliday  
9780231204972  
£25.00 • \$30.00 • Paperback  
Science / Paleontology  
July 2023  
Columbia University Press

During the Last Ice Age, Europe was a cold, dry place teeming with mammoths, woolly rhinoceroses, reindeer, bison, cave bears, cave hyenas, and cave lions. It was also the home of people physically indistinguishable from humans today, commonly known as the Cro-Magnons. Our knowledge of them comes from either their skeletons or the tools, art, and debris they left behind.

This book tells the story of these dynamic and resilient people in light of recent scientific advances. Trenton Holliday—a paleoanthropologist who has studied the Cro-Magnons for decades—explores questions such as: Where and when did anatomically modern humans first emerge? When did they reach Europe, and via what routes? How extensive or frequent were their interactions with Neandertals? What did Cro-Magnons look like? What did they eat, and how did they acquire their food? What can we learn about their lives from studying their skeletons? How did they deal with the glacial cold? What does their art tell us about them?

Holliday offers new insights into these ancient people from anthropological, archaeological, genetic, and geological perspectives. He also considers how the Cro-Magnons responded to Earth's postglacial warming almost 12,000 years ago, showing that how they dealt with climate change holds valuable lessons for us as we negotiate life on a rapidly warming planet.



### Dinopedia – A Brief Compendium of Dinosaur Lore

Darren Naish  
9780691212029  
£10.99 • \$16.95 • Hardcover  
Nature / Animals / Dinosaurs & Prehistoric Creatures  
October 2021  
Princeton University Press

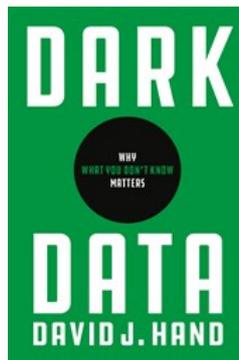
**An illuminating and entertaining collection of dinosaur facts, from A to Z**

*Dinopedia* is an illustrated, pocket-friendly encyclopedia of all things dinosaurian. Featuring dozens of entries on topics ranging from hadrosaur nesting colonies to modern fossil hunters and paleontologists such as Halszka Osmólska and Paul Sereno, this amazing A–Z compendium is brimming with facts about these thrilling, complex, and sophisticated animals.

Almost everything we know about dinosaurs has changed in recent decades. A scientific revolution, kick-started in the late 1960s by astounding new discoveries and a succession of new ideas, has shown that these magnificent creatures were marvels of evolution that surpassed modern reptiles and mammals in size, athletic abilities, and more. Darren Naish sheds invaluable light on our current, fast-changing understanding of dinosaur diversity and evolutionary history, and discusses the cultural impacts of dinosaurs through books, magazines, and movies. Naish also shows how our emerging view of these animals is very much a human story about ambition and competing egos, revealing that controversy and disagreement are commonplace in the vigorous field of dinosaur studies.

With a wealth of original illustrations by the author, *Dinopedia* is an informative and entertaining collection of lore for the dinosaur lover in all of us.

- Features a cloth cover with an elaborate foil-stamped design



### Dark Data – Why What You Don't Know Matters

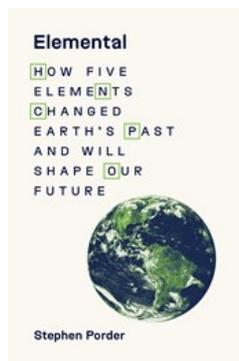
David J. Hand  
9780691234465  
£16.99 • \$19.95 • Paperback  
Computers / Data Science / Data Analytics  
April 2022  
Princeton University Press

**A practical guide to making good decisions in a world of missing data**

In the era of big data, it is easy to imagine that we have all the information we need to make good decisions. But in fact the data we have are never complete, and may be only the tip of the iceberg. Just as much of the universe is composed of dark matter, invisible to us but nonetheless present, the universe of information is full of dark data that we overlook at our peril. In *Dark Data*, data expert David Hand takes us on a fascinating and enlightening journey into the world of the data we don't see.

*Dark Data* explores the many ways in which we can be blind to missing data and how that can lead us to conclusions and actions that are mistaken, dangerous, or even disastrous. Examining a wealth of real-life examples, from the Challenger shuttle explosion to complex financial frauds, Hand gives us a practical taxonomy of the types of dark data that exist and the situations in which they can arise, so that we can learn to recognize and control for them. In doing so, he teaches us not only to be alert to the problems presented by the things we don't know, but also shows how dark data can be used to our advantage, leading to greater understanding and better decisions.

Today, we all make decisions using data. *Dark Data* shows us all how to reduce the risk of making bad ones.



### Elemental – How Five Elements Changed Earth's Past and Will Shape Our Future

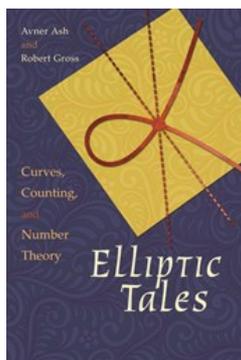
Stephen Porder  
9780691177298  
£22.00 • \$27.95 • Hardcover  
Science / Environmental Science  
November 2023  
Princeton University Press

**An ecologist explores how life itself shapes Earth using the elemental constituents we all share**

It is rare for life to change Earth, yet three organisms have profoundly transformed our planet over the long course of its history. *Elemental* reveals how microbes, plants, and people used the fundamental building blocks of life to alter the climate, and with it, the trajectory of life on Earth in the past, present, and future.

Taking readers from the deep geologic past to our current era of human dominance, Stephen Porder focuses on five of life's essential elements—hydrogen, oxygen, carbon, nitrogen, and phosphorus. He describes how single-celled cyanobacteria and plants harnessed them to wildly proliferate across the oceans and the land, only to eventually precipitate environmental catastrophes. He then brings us to the present, and shows how these elements underpin the success of human civilization, and how their mismanagement threatens similarly catastrophic unintended consequences. But, Porder argues, if we can learn from our world-changing predecessors, we can construct a more sustainable future.

Blending conversational storytelling with the latest science, Porder takes us deep into the Amazon, across fresh lava flows in Hawaii, and to the cornfields of the American Midwest to illuminate a potential path to sustainability, informed by the constraints imposed by life's essential elements and the four-billion-year history of life on Earth.



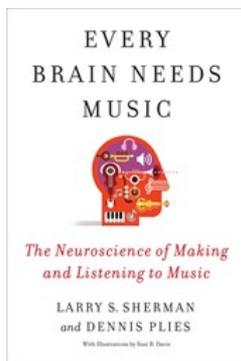
### Elliptic Tales – Curves, Counting, and Number Theory

Avner Ash  
9780691163505  
£13.99 • \$16.95 • Paperback  
Mathematics / History & Philosophy  
October 2014  
Princeton University Press

#### A look at one of the most exciting unsolved problems in mathematics today

*Elliptic Tales* describes the latest developments in number theory by looking at one of the most exciting unsolved problems in contemporary mathematics—the Birch and Swinnerton-Dyer Conjecture. In this book, Avner Ash and Robert Gross guide readers through the mathematics they need to understand this captivating problem.

The key to the conjecture lies in elliptic curves, which may appear simple, but arise from some very deep—and often very mystifying—mathematical ideas. Using only basic algebra and calculus while presenting numerous eye-opening examples, Ash and Gross make these ideas accessible to general readers, and, in the process, venture to the very frontiers of modern mathematics.



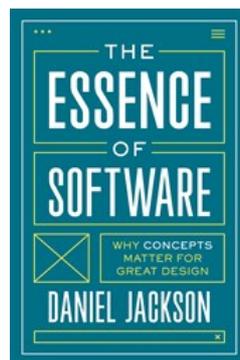
### Every Brain Needs Music – The Neuroscience of Making and Listening to Music

Lawrence Sherman  
9780231209106  
£28.00 • \$32.00 • Hardcover  
Science / Life Sciences / Neuroscience  
May 2023  
Columbia University Press

Whenever a person engages with music—when a piano student practices a scale, a jazz saxophonist riffs on a melody, a teenager sobs to a sad song, or a wedding guest gets down on the dance floor—countless neurons are firing. Playing an instrument requires all of the resources of the nervous system, including cognitive, sensory, and motor functions. Composition and improvisation are remarkable demonstrations of the brain's capacity for creativity. Something as seemingly simple as listening to a tune involves mental faculties most of us don't even realize we have.

Larry S. Sherman, a neuroscientist and lifelong musician, and Dennis Plies, a professional musician and teacher, collaborate to show how our brains and music work in harmony. They consider music in all the ways we encounter it—teaching, learning, practicing, listening, composing, improvising, and performing—in terms of neuroscience as well as music pedagogy, showing how the brain functions and even changes in the process. *Every Brain Needs Music* draws on leading behavioral, cellular, and molecular neuroscience research as well as surveys of more than a hundred musical people. It provides new perspectives on learning to play, teaching, how to practice and perform, the ways we react to music, and why the brain benefits from musical experiences.

Written for both musical and nonmusical people, including newcomers to brain science, this book is a lively and easy-to-read exploration of the neuroscience of music and its significance in our lives.



### The Essence of Software – Why Concepts Matter for Great Design

Daniel Jackson  
9780691230832  
£20.00 • \$23.95 • Paperback  
Computers / Computer Science  
August 2023  
Princeton University Press

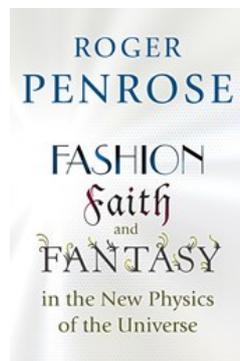
#### A revolutionary concept-based approach to thinking about, designing, and interacting with software

As our dependence on technology increases, the design of software matters more than ever before. Why then is so much software flawed? Why hasn't there been a systematic and scalable way to create software that is easy to use, robust, and secure?

Examining these issues in depth, *The Essence of Software* introduces a theory of software design that gives new answers to old questions. Daniel Jackson explains that a software system should be viewed as a collection of interacting concepts, breaking the functionality into manageable parts and providing a new framework for thinking about design. Through this radical and original perspective, Jackson lays out a practical and coherent path, accessible to anyone—from strategist and marketer to UX designer, architect, or programmer—for making software that is empowering, dependable, and a delight to use.

Jackson explores every aspect of concepts—what they are and aren't, how to identify them, how to define them, and more—and offers prescriptive principles and practical tips that can be applied cost-effectively in a wide range of domains. He applies these ideas to contemporary software designs, drawing examples from leading software manufacturers such as Adobe, Apple, Dropbox, Facebook, Google, Microsoft, Twitter, and others. Jackson shows how concepts let designers preserve and reuse design knowledge, rather than starting from scratch in every project.

An argument against the status quo and a guide to improvement for both working designers and novices to the field, *The Essence of Software* brings a fresh approach to software and its creation.



### Fashion, Faith, and Fantasy in the New Physics of the Universe

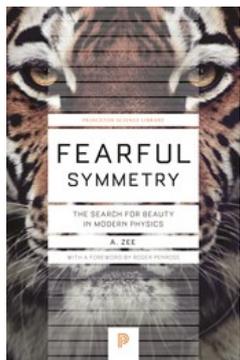
Roger Penrose  
9780691178530  
£15.99 • \$18.95 • Paperback  
Science / Philosophy & Social Aspects  
August 2017  
Princeton University Press

#### Nobel Prize-winning physicist Roger Penrose questions some of the most fashionable ideas in physics today, including string theory

What can fashionable ideas, blind faith, or pure fantasy possibly have to do with the scientific quest to understand the universe? Surely, theoretical physicists are immune to mere trends, dogmatic beliefs, or flights of fancy? In fact, acclaimed physicist and bestselling author Roger Penrose argues that researchers working at the extreme frontiers of physics are just as susceptible to these forces as anyone else. In this provocative book, he argues that fashion, faith, and fantasy, while sometimes productive and even essential in physics, may be leading today's researchers astray in three of the field's most important areas—string theory, quantum mechanics, and cosmology.

Arguing that string theory has veered away from physical reality by positing six extra hidden dimensions, Penrose cautions that the fashionable nature of a theory can cloud our judgment of its plausibility. In the case of quantum mechanics, its stunning success in explaining the atomic universe has led to an uncritical faith that it must also apply to reasonably massive objects, and Penrose responds by suggesting possible changes in quantum theory. Turning to cosmology, he argues that most of the current fantastical ideas about the origins of the universe cannot be true, but that an even wilder reality may lie behind them. Finally, Penrose describes how fashion, faith, and fantasy have ironically also shaped his own work, from twistor theory, a possible alternative to string theory that is beginning to acquire a fashionable status, to "conformal cyclic cosmology," an idea so fantastic that it could be called "conformal crazy cosmology."

The result is an important critique of some of the most significant developments in physics today from one of its most eminent figures.

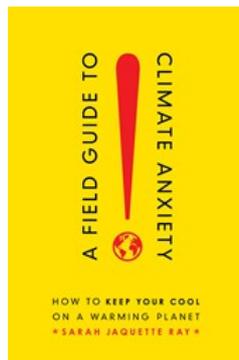


### Fearful Symmetry – The Search for Beauty in Modern Physics

Anthony Zee  
9780691173269  
£18.99 • \$22.95 • Paperback  
Science / Physics  
September 2016  
Princeton University Press

**An engaging exploration of beauty in physics, with a foreword by Nobel Prize-winning physicist Roger Penrose**

The concept of symmetry has widespread manifestations and many diverse applications—from architecture to mathematics to science. Yet, as twentieth-century physics has revealed, symmetry has a special, central role in nature, one that is occasionally and enigmatically violated. *Fearful Symmetry* brings the incredible discoveries of the juxtaposition of symmetry and asymmetry in contemporary physics within everyone's grasp. A. Zee, a distinguished physicist and skillful expositor, tells the exciting story of how contemporary theoretical physicists are following Einstein in their search for the beauty and simplicity of Nature. Animated by a sense of reverence and whimsy, *Fearful Symmetry* describes the majestic sweep and accomplishments of twentieth-century physics—one of the greatest chapters in the intellectual history of humankind.



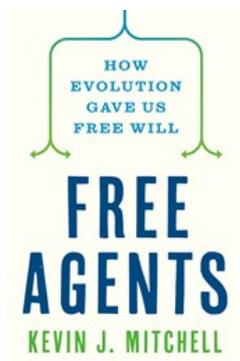
### A Field Guide to Climate Anxiety – How to Keep Your Cool on a Warming Planet

Sarah Jaquette Ray  
9780520343306  
£14.99 • \$16.95 • Paperback  
Science / Global Warming & Climate Change  
March 2020  
University of California Press

**Gen Z's first "existential toolkit" for combating eco-guilt and burnout while advocating for climate justice.**

A youth movement is reenergizing global environmental activism. The “climate generation”—late millennials and iGen, or Generation Z—is demanding that policy makers and government leaders take immediate action to address the dire outcomes predicted by climate science. Those inheriting our planet's environmental problems expect to encounter challenges, but they may not have the skills to grapple with the feelings of powerlessness and despair that may arise when they confront this seemingly intractable situation.

Drawing on a decade of experience leading and teaching in college environmental studies programs, Sarah Jaquette Ray has created an “existential tool kit” for the climate generation. Combining insights from psychology, sociology, social movements, mindfulness, and the environmental humanities, Ray explains why and how we need to let go of eco-guilt, resist burnout, and cultivate resilience while advocating for climate justice. *A Field Guide to Climate Anxiety* is the essential guidebook for the climate generation—and perhaps the rest of us—as we confront the greatest environmental threat of our time.



### Free Agents – How Evolution Gave Us Free Will

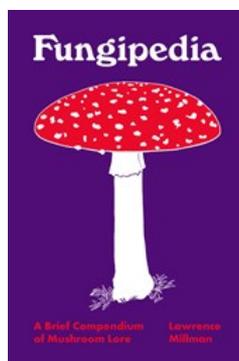
Kevin J. Mitchell  
9780691226231  
£25.00 • \$29.95 • Hardcover  
Science / Life Sciences / Neuroscience  
October 2023  
Princeton University Press

**An evolutionary case for the existence of free will**

Scientists are learning more and more about how brain activity controls behavior and how neural circuits weigh alternatives and initiate actions. As we probe ever deeper into the mechanics of decision making, many conclude that agency—or free will—is an illusion. In *Free Agents*, leading neuroscientist Kevin Mitchell presents a wealth of evidence to the contrary, arguing that we are not mere machines responding to physical forces but agents acting with purpose.

Traversing billions of years of evolution, Mitchell tells the remarkable story of how living beings capable of choice arose from lifeless matter. He explains how the emergence of nervous systems provided a means to learn about the world, granting sentient animals the capacity to model, predict, and simulate. Mitchell reveals how these faculties reached their peak in humans with our abilities to imagine and to be introspective, to reason in the moment, and to shape our possible futures through the exercise of our individual agency. Mitchell's argument has important implications—for how we understand decision making, for how our individual agency can be enhanced or infringed, for how we think about collective agency in the face of global crises, and for how we consider the limitations and future of artificial intelligence.

An astonishing journey of discovery, *Free Agents* offers a new framework for understanding how, across a billion years of Earth history, life evolved the power to choose, and why it matters.



### Fungipedia – A Brief Compendium of Mushroom Lore

Lawrence Millman  
9780691194721  
£10.99 • \$16.95 • Hardcover  
Nature / Plants / Mushrooms  
September 2019  
Princeton University Press

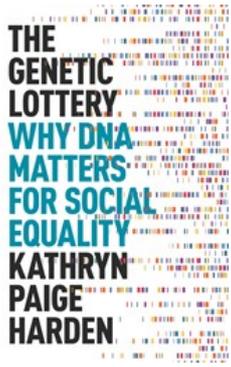
**"This little book is big fun."—Michael Pollan**

**An illustrated mini-encyclopedia of fungal lore, from John Cage and Terence McKenna to mushroom sex and fairy rings**

*Fungipedia* presents a delightful A–Z treasury of mushroom lore. With more than 180 entries—on topics as varied as *Alice in Wonderland*, chestnut blight, medicinal mushrooms, poisonings, Santa Claus, and waxy caps—this collection will transport both general readers and specialists into the remarkable universe of fungi.

Combining ecological, ethnographic, historical, and contemporary knowledge, author and mycologist Lawrence Millman discusses how mushrooms are much more closely related to humans than to plants, how they engage in sex, how insects farm them, and how certain species happily dine on leftover radiation, cockroach antennae, and dung. He explores the lives of individuals like African American scientist George Washington Carver, who specialized in crop diseases caused by fungi; Beatrix Potter, creator of *Peter Rabbit*, who was prevented from becoming a professional mycologist because she was a woman; and Gordon Wasson, a J. P. Morgan vice-president who almost single-handedly introduced the world to magic mushrooms. Millman considers why fungi are among the most significant organisms on our planet and how they are currently being affected by destructive human behavior, including climate change.

With charming drawings by artist and illustrator Amy Jean Porter, *Fungipedia* offers a treasure trove of scientific and cultural information. The world of mushrooms lies right at your door—be amazed!



### The Genetic Lottery – Why DNA Matters for Social Equality

Kathryn Paige Harden  
9780691242101  
£15.99 • \$18.95 • Paperback  
Science / Life Sciences / Genetics & Genomics  
December 2022  
Princeton University Press

#### A provocative and timely case for how the science of genetics can help create a more just and equal society

In recent years, scientists like Kathryn Paige Harden have shown that DNA makes us different, in our personalities and in our health—and in ways that matter for educational and economic success in our current society.

In *The Genetic Lottery*, Harden introduces readers to the latest genetic science, dismantling dangerous ideas about racial superiority and challenging us to grapple with what equality really means in a world where people are born different. Weaving together personal stories with scientific evidence, Harden shows why our refusal to recognize the power of DNA perpetuates the myth of meritocracy, and argues that we must acknowledge the role of genetic luck if we are ever to create a fair society.

Reclaiming genetic science from the legacy of eugenics, this groundbreaking book offers a bold new vision of society where everyone thrives, regardless of how one fares in the genetic lottery.



### Geopedia – A Brief Compendium of Geologic Curiosities

Marcia Bjornerud  
9780691212579  
£10.99 • \$16.95 • Hardcover  
Science / Earth Sciences / Geology  
May 2022  
Princeton University Press

#### A garden of geologic delights for all Earthlings

*Geopedia* is a trove of geologic wonders and the evocative terms that humans have devised to describe them. Featuring dozens of entries—from Acasta gneiss to Zircon—this illustrated compendium is brimming with lapidary and lexical insights that will delight rockhounds and word lovers alike.

Geoscientists are magpies for words, and with good reason. The sheer profusion of minerals, landforms, and geologic events produced by our creative planet demands an immense vocabulary to match. Marcia Bjornerud shows how this lexicon reflects not only the diversity of rocks and geologic processes but also the long history of human interactions with them.

With wit and warmth, she invites all readers to celebrate the geologic glossary—a gallimaufry of allusions to mythology, imports from diverse languages, embarrassing anachronisms, and recent neologisms. This captivating book includes cross-references at the end of each entry, inviting you to leave the alphabetic trail and meander through it like a river. Its pocket-friendly size makes it the perfect travel companion no matter where your own geologic forays may lead you.

With whimsical illustrations by Haley Hagerman, *Geopedia* is a mix of engaging and entertaining facts about how the earth works, how it has coevolved with life over billions of years, and how our understanding of the planet has deepened over time.

- Features a cloth cover with an elaborate foil-stamped design



### A History of Biology

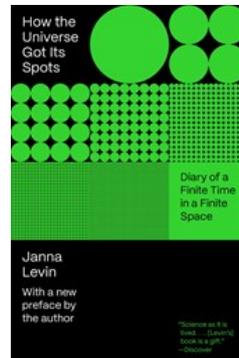
Michel Morange  
9780691253923  
£18.99 • \$22.95 • Paperback  
Science / Life Sciences / Biology  
August 2023  
Princeton University Press

#### A comprehensive history of the biological sciences from antiquity to the modern era

This book presents a global history of the biological sciences from ancient times to today, providing needed perspective on the development of biological thought while shedding light on the field's upheavals and key breakthroughs through the ages. Michel Morange brings to life the dynamic interplay of science, society, and biology's many subdisciplines, enabling readers to better appreciate the interdisciplinary exchanges that have shaped the field over the centuries.

Each chapter of this incisive book focuses on a specific period in the history of biology, describing the major transformations that occurred, the enduring scientific concerns behind these changes, and the implications of yesterday's science for today's. Morange covers everything from the first cell theory to the origins of the concept of ecosystems, and offers perspectives on areas that are often neglected by historians of biology, such as ecology, ethnology, and plant biology. Along the way, he highlights the contributions of technology, the important role of hypothesis and experimentation, and the cultural contexts in which some of the most breathtaking discoveries in biology were made.

Unrivaled in scope and written by a world-renowned historian of science, *A History of Biology* is an ideal introduction for students and experts alike, and essential reading for anyone seeking to understand the present state of biological knowledge.

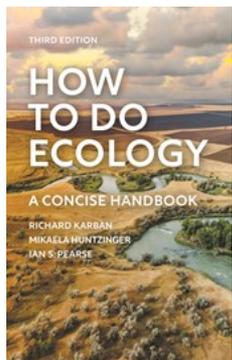


### How the Universe Got Its Spots – Diary of a Finite Time in a Finite Space

Janna Levin  
9780691232270  
£14.99 • \$17.95 • Paperback  
Science / Physics  
March 2023  
Princeton University Press

#### Mixing memoir and visionary science, a leading astrophysicist's groundbreaking personal account of her life and ideas

*Is the universe infinite or just really big?* With this question, cosmologist Janna Levin announces the central theme of this book, which established her as one of the most direct, unorthodox, and creative voices in contemporary science. As Levin sets out to determine how big “really big” may be, she offers a rare intimate look at the daily life of an innovative physicist, complete with jet lag and the tensions between personal relationships and the extreme demands of scientific exploration. Nimbly explaining geometry, topology, chaos, and string theory, Levin shows how the pattern of hot and cold spots left over from the big bang may one day reveal the size of the cosmos. The result is a thrilling story of cosmology by one of its leading thinkers.



### How to Do Ecology – A Concise Handbook – Third Edition

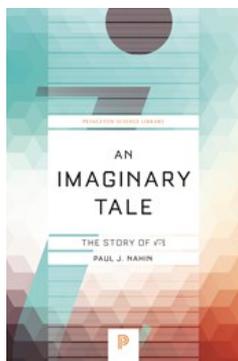
Richard Karban  
9780691245751  
£22.00 • \$27.95 • Paperback  
Science / Life Sciences / Ecology  
August 2023  
Princeton University Press

**The essential insider's guide for ecologists at all career stages—now completely updated and expanded**

Most books and courses in ecology focus on facts and concepts but do little to explain the process of research. *How to Do Ecology* provides nuts-and-bolts advice for organizing and conducting a successful research program. This fully updated and expanded edition explains how to ask and answer your own research questions using compelling study design and appropriate stats. Ecology doesn't take place exclusively outdoors, so the book shares invaluable insights on topics such as identifying your goals, developing professional relationships, reading efficiently, and organizing a field season. Because the currency in ecology is publications, it also suggests effective ways to communicate your ideas through journal articles, oral presentations, posters, and grant proposals. This incisive handbook makes explicit many of the unstated rules that ecologists follow and serves as a practical resource for meaningful conversations about ecology.

This new edition includes:

- Expanded emphasis on collecting and interpreting observational data
- An innovative new workshop for generating and evaluating creative research questions
- Helpful tips on developing the skills most important to students, navigating your career path, writing efficiently, and more



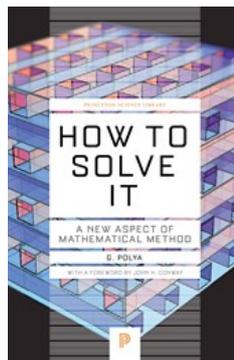
### An Imaginary Tale – The Story of $-1$

Paul J. Nahin  
9780691169248  
£13.99 • \$16.95 • Paperback  
Mathematics / History & Philosophy  
April 2016  
Princeton University Press

Today complex numbers have such widespread practical use—from electrical engineering to aeronautics—that few people would expect the story behind their derivation to be filled with adventure and enigma. In *An Imaginary Tale*, Paul Nahin tells the 2000-year-old history of one of mathematics' most elusive numbers, the square root of minus one, also known as  $i$ . He recreates the baffling mathematical problems that conjured it up, and the colorful characters who tried to solve them.

In 1878, when two brothers stole a mathematical papyrus from the ancient Egyptian burial site in the Valley of Kings, they led scholars to the earliest known occurrence of the square root of a negative number. The papyrus offered a specific numerical example of how to calculate the volume of a truncated square pyramid, which implied the need for  $i$ . In the first century, the mathematician-engineer Heron of Alexandria encountered  $i$  in a separate project, but fudged the arithmetic; medieval mathematicians stumbled upon the concept while grappling with the meaning of negative numbers, but dismissed their square roots as nonsense. By the time of Descartes, a theoretical use for these elusive square roots—now called "imaginary numbers"—was suspected, but efforts to solve them led to intense, bitter debates. The notorious  $i$  finally won acceptance and was put to use in complex analysis and theoretical physics in Napoleonic times.

Addressing readers with both a general and scholarly interest in mathematics, Nahin weaves into this narrative entertaining historical facts and mathematical discussions, including the application of complex numbers and functions to important problems, such as Kepler's laws of planetary motion and ac electrical circuits. This book can be read as an engaging history, almost a biography, of one of the most evasive and pervasive "numbers" in all of mathematics.



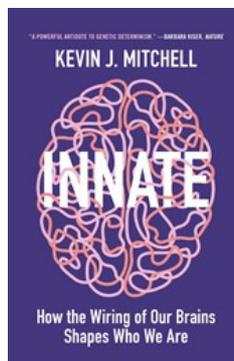
### How to Solve it – A New Aspect of Mathematical Method

G. Polya  
9780691164076  
£16.99 • \$19.95 • Paperback  
Mathematics / Logic  
October 2014  
Princeton University Press

**The bestselling book that has helped millions of readers solve any problem**

A must-have guide by eminent mathematician G. Polya, *How to Solve It* shows anyone in any field how to think straight. In lucid and appealing prose, Polya reveals how the mathematical method of demonstrating a proof or finding an unknown can help you attack any problem that can be reasoned out—from building a bridge to winning a game of anagrams. *How to Solve It* includes a heuristic dictionary with dozens of entries on how to make problems more manageable—from analogy and induction to the heuristic method of starting with a goal and working backward to something you already know.

This disarmingly elementary book explains how to harness curiosity in the classroom, bring the inventive faculties of students into play, and experience the triumph of discovery. But it's not just for the classroom. Generations of readers from all walks of life have relished Polya's brilliantly deft instructions on stripping away irrelevancies and going straight to the heart of a problem.

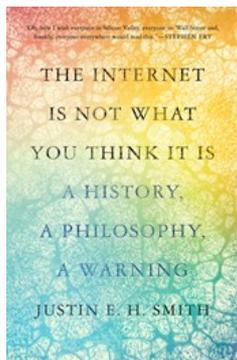


### Innate – How the Wiring of Our Brains Shapes Who We Are

Kevin J. Mitchell  
9780691204154  
£15.99 • \$18.95 • Paperback  
Science / Life Sciences / Neuroscience  
March 2020  
Princeton University Press

**A leading neuroscientist explains why your personal traits are more innate than you think**

What makes you the way you are—and what makes each of us different from everyone else? In *Innate*, leading neuroscientist and popular science blogger Kevin Mitchell traces human diversity and individual differences to their deepest level: in the wiring of our brains. Deftly guiding us through important new research, including his own groundbreaking work, he explains how variations in the way our brains develop before birth strongly influence our psychology and behavior throughout our lives, shaping our personality, intelligence, sexuality, and even the way we perceive the world. Compelling and original, *Innate* will change the way you think about why and how we are who we are.



### The Internet Is Not What You Think It Is – A History, a Philosophy, a Warning

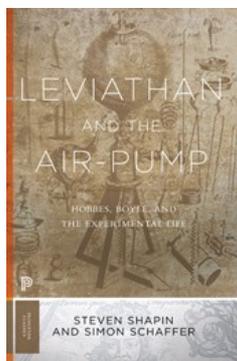
Justin Smith–ruui  
9780691235219  
£13.99 • \$16.95 • Paperback  
Philosophy / Ethics & Moral Philosophy  
October 2023  
Princeton University Press

**An original deep history of the internet that tells the story of the centuries-old utopian dreams behind it—and explains why they have died today**

Many think of the internet as an unprecedented and overwhelmingly positive achievement of modern human technology. But is it? In *The Internet Is Not What You Think It Is*, Justin Smith offers an original deep history of the internet, from the ancient to the modern world—uncovering its surprising origins in nature and centuries-old dreams of radically improving human life by outsourcing thinking to machines and communicating across vast distances. Yet, despite the internet's continuing potential, Smith argues, the utopian hopes behind it have finally died today, killed by the harsh realities of social media, the global information economy, and the attention-destroying nature of networked technology.

Ranging over centuries of the history and philosophy of science and technology, Smith shows how the “internet” has been with us much longer than we usually think. He draws fascinating connections between internet user experience, artificial intelligence, the invention of the printing press, communication between trees, and the origins of computing in the machine-driven looms of the silk industry. At the same time, he reveals how the internet's organic structure and development root it in the natural world in unexpected ways that challenge efforts to draw an easy line between technology and nature.

Combining the sweep of intellectual history with the incisiveness of philosophy, *The Internet Is Not What You Think It Is* cuts through our daily digital lives to give a clear-sighted picture of what the internet is, where it came from, and where it might be taking us in the coming decades.

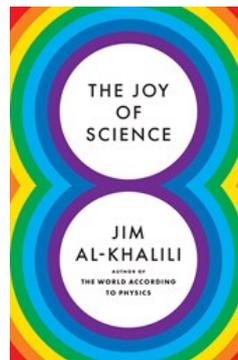


### Leviathan and the Air-Pump – Hobbes, Boyle, and the Experimental Life

Steven Shapin  
9780691178165  
£20.00 • \$23.95 • Paperback  
0  
December 2017  
Princeton University Press

*Leviathan and the Air-Pump* examines the conflicts over the value and propriety of experimental methods between two major seventeenth-century thinkers: Thomas Hobbes, author of the political treatise *Leviathan* and vehement critic of systematic experimentation in natural philosophy, and Robert Boyle, mechanical philosopher and owner of the newly invented air-pump. The issues at stake in their disputes ranged from the physical integrity of the air-pump to the intellectual integrity of the knowledge it might yield. Both Boyle and Hobbes were looking for ways of establishing knowledge that did not decay into ad hominem attacks and political division. Boyle proposed the experiment as cure. He argued that facts should be manufactured by machines like the air-pump so that gentlemen could witness the experiments and produce knowledge that everyone agreed on. Hobbes, by contrast, looked for natural law and viewed experiments as the artificial, unreliable products of an exclusive guild.

The new approaches taken in *Leviathan and the Air-Pump* have been enormously influential on historical studies of science. Shapin and Schaffer found a moment of scientific revolution and showed how key scientific givens—facts, interpretations, experiment, truth—were fundamental to a new political order. Shapin and Schaffer were also innovative in their ethnographic approach. Attempting to understand the work habits, rituals, and social structures of a remote, unfamiliar group, they argued that politics were tied up in what scientists did, rather than what they said. Steven Shapin and Simon Schaffer use the confrontation between Hobbes and Boyle as a way of understanding what was at stake in the early history of scientific experimentation. They describe the protagonists' divergent views of natural knowledge, and situate the Hobbes-Boyle disputes within contemporary debates over the role of intellectuals in public life and the problems of social order and assent in Restoration England. In a new introduction, the authors describe how science



### The Joy of Science

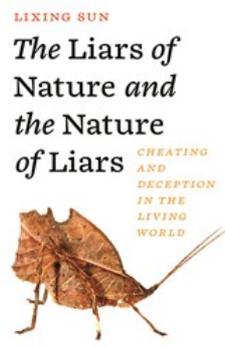
Jim Al-Khalili  
9780691211572  
£12.99 • \$16.95 • Hardcover  
Science / Philosophy & Social Aspects  
April 2022  
Princeton University Press

**Quantum physicist, *New York Times* bestselling author, and BBC host Jim Al-Khalili reveals how 8 lessons from the heart of science can help you get the most out of life**

Today's world is unpredictable and full of contradictions, and navigating its complexities while trying to make the best decisions is far from easy. *The Joy of Science* presents 8 short lessons on how to unlock the clarity, empowerment, and joy of thinking and living a little more scientifically.

In this brief guide to leading a more rational life, acclaimed physicist Jim Al-Khalili invites readers to engage with the world as scientists have been trained to do. The scientific method has served humankind well in its quest to see things as they really are, and underpinning the scientific method are core principles that can help us all navigate modern life more confidently. Discussing the nature of truth and uncertainty, the role of doubt, the pros and cons of simplification, the value of guarding against bias, the importance of evidence-based thinking, and more, Al-Khalili shows how the powerful ideas at the heart of the scientific method are deeply relevant to the complicated times we live in and the difficult choices we make.

Read this book and discover the joy of science. It will empower you to think more objectively, see through the fog of your own preexisting beliefs, and lead a more fulfilling life.



### The Liars of Nature and the Nature of Liars – Cheating and Deception in the Living World

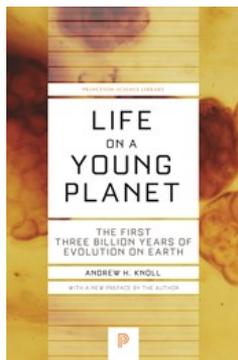
Lixing Sun  
9780691198606  
£25.00 • \$29.95 • Hardcover  
Science / Life Sciences / Zoology / Ethology (Animal Behavior)  
May 2023  
Princeton University Press

**A natural history of cheating from selfish genes to lying politicians**

Nature is rife with cheating. Possums play possum, feigning death to cheat predators. Crows cry wolf to scare off rivals. Amphibians and reptiles are inveterate impostors. Even genes and cells cheat. *The Liars of Nature and the Nature of Liars* explores the evolution of cheating in the natural world, revealing how dishonesty has given rise to wondrous diversity.

Blending cutting-edge science with a wealth of illuminating examples—from microscopic organisms to highly intelligent birds and mammals—Lixing Sun shows how cheating in nature relies on two basic rules. One is lying, by which cheaters exploit honest messages in communication signals and use them to serve their own interests. The other is deceiving, by which cheaters exploit the biases and loopholes in the sensory systems of other creatures. Sun demonstrates that cheating serves as a potent catalyst in the evolutionary arms race between the cheating and the cheated, resulting in a biological world teeming with complexity and beauty.

Brimming with insight and humor, *The Liars of Nature and the Nature of Liars* also looks at the prevalence of cheating in human society, identifying the kinds of cheating that spur innovation and cultural vitality and laying down a blueprint for combatting malicious cheating such as fake news and disinformation.



### Life on a Young Planet – The First Three Billion Years of Evolution on Earth – Updated Edition

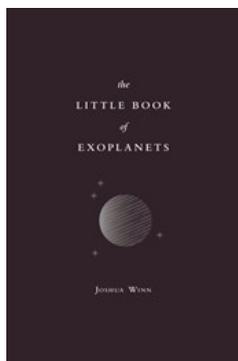
Andrew H. Knoll  
9780691165530  
£16.99 • \$19.95 • Paperback  
Science / Life Sciences / Evolution  
February 2015  
Princeton University Press

Australopithecines, dinosaurs, trilobites—such fossils conjure up images of lost worlds filled with vanished organisms. But in the full history of life, ancient animals, even the trilobites, form only the half-billion-year tip of a nearly four-billion-year iceberg. Andrew Knoll explores the deep history of life from its origins on a young planet to the incredible Cambrian explosion, presenting a compelling new explanation for the emergence of biological novelty.

The very latest discoveries in paleontology—many of them made by the author and his students—are integrated with emerging insights from molecular biology and earth system science to forge a broad understanding of how the biological diversity that surrounds us came to be. Moving from Siberia to Namibia to the Bahamas, Knoll shows how life and environment have evolved together through Earth's history. Innovations in biology have helped shape our air and oceans, and, just as surely, environmental change has influenced the course of evolution, repeatedly closing off opportunities for some species while opening avenues for others.

Readers go into the field to confront fossils, enter the lab to discern the inner workings of cells, and alight on Mars to ask how our terrestrial experience can guide exploration for life beyond our planet. Along the way, Knoll brings us up-to-date on some of science's hottest questions, from the oldest fossils and claims of life beyond the Earth to the hypothesis of global glaciation and Knoll's own unifying concept of "permissive ecology."

In laying bare Earth's deepest biological roots, *Life on a Young Planet* helps us understand our own



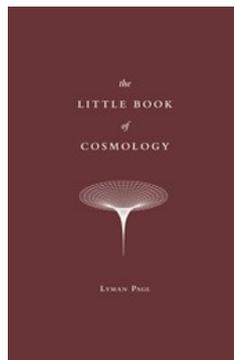
### The Little Book of Exoplanets

Joshua N. Winn  
9780691215471  
£18.99 • \$22.95 • Hardcover  
Science / Physics / Astrophysics  
July 2023  
Princeton University Press

**A concise and accessible introduction to exoplanets that explains the cutting-edge science behind recent discoveries**

For centuries, people have speculated about the possibility of planets orbiting distant stars, but only since the 1990s has technology allowed astronomers to detect them. At this point, more than five thousand such exoplanets have been identified, with the pace of discovery accelerating after the launch of NASA's Transiting Exoplanet Survey Satellite and the Webb Space Telescope. In *The Little Book of Exoplanets*, Princeton astrophysicist Joshua Winn offers a brief and engaging introduction to the search for exoplanets and the cutting-edge science behind recent findings. In doing so, he chronicles the dawn of a new age of discovery—one that has rapidly transformed astronomy and our broader understanding of the universe.

Scientists now know that many Sun-like stars host their own systems of planets, some of which may resemble our solar system and include planets similar to the Earth. But, Winn tells us, the most remarkable discoveries so far have been of planets with unexpected and decidedly un-Earth-like properties, which have upended what we thought we knew about the origins of planetary systems. Winn provides an inside view of the sophisticated detective work astronomers perform as they find and study exoplanets and describes the surprising—sometimes downright bizarre—planets and systems they have found. He explains how these discoveries are revolutionizing astronomy, and he explores the current status and possible future of the search for another Earth. Finally, drawing on his own and other scientists' work, he considers how the discovery of exoplanets and their faraway solar systems changes our perspectives on the universe and our place in it.



### The Little Book of Cosmology

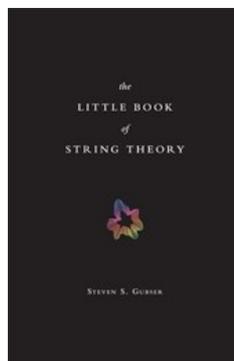
Lyman Page  
9780691195780  
£16.99 • \$19.95 • Hardcover  
Science / Space Science / Cosmology  
March 2020  
Princeton University Press

**The cutting-edge science that is taking the measure of the universe**

*The Little Book of Cosmology* provides a breathtaking look at our universe on the grandest scales imaginable. Written by one of the world's leading experimental cosmologists, this short but deeply insightful book describes what scientists are revealing through precise measurements of the faint thermal afterglow of the Big Bang—known as the cosmic microwave background, or CMB—and how their findings are transforming our view of the cosmos.

Blending the latest findings in cosmology with essential concepts from physics, Lyman Page first helps readers to grasp the sheer enormity of the universe, explaining how to understand the history of its formation and evolution in space and time. Then he sheds light on how spatial variations in the CMB formed, how they reveal the age, size, and geometry of the universe, and how they offer a blueprint for the formation of cosmic structure.

Not only does Page explain current observations and measurements, he describes how they can be woven together into a unified picture to form the Standard Model of Cosmology. Yet much remains unknown, and this incisive book also describes the search for ever deeper knowledge at the field's frontiers—from quests to understand the nature of neutrinos and dark energy to investigations into the physics of the very early universe.



### The Little Book of String Theory

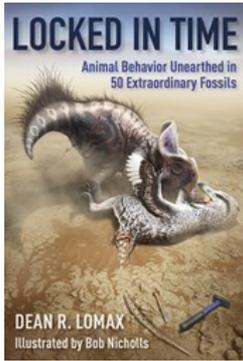
Steven S. Gubser  
9780691142890  
£16.99 • \$19.95 • Hardcover  
Science / Physics  
March 2010  
Princeton University Press

**The essential beginner's guide to string theory**

*The Little Book of String Theory* offers a short, accessible, and entertaining introduction to one of the most talked-about areas of physics today. String theory has been called the "theory of everything." It seeks to describe all the fundamental forces of nature. It encompasses gravity and quantum mechanics in one unifying theory. But it is unproven and fraught with controversy. After reading this book, you'll be able to draw your own conclusions about string theory.

Steve Gubser begins by explaining Einstein's famous equation  $E = mc^2$ , quantum mechanics, and black holes. He then gives readers a crash course in string theory and the core ideas behind it. In plain English and with a minimum of mathematics, Gubser covers strings, branes, string dualities, extra dimensions, curved spacetime, quantum fluctuations, symmetry, and supersymmetry. He describes efforts to link string theory to experimental physics and uses analogies that nonscientists can understand. How does Chopin's *Fantasia-Improvisation* relate to quantum mechanics? What would it be like to fall into a black hole? Why is dancing a waltz similar to contemplating a string duality? Find out in the pages of this book.

*The Little Book of String Theory* is the essential, most up-to-date beginner's guide to this elegant, multidimensional field of physics.

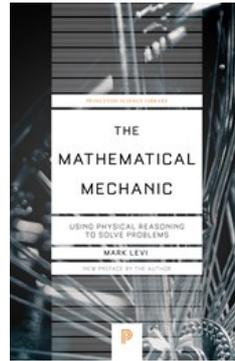


### Locked in Time – Animal Behavior Unearthed in 50 Extraordinary Fossils

Dean R. Lomax  
9780231197298  
£16.99 • \$19.95 • Paperback  
Science / Paleontology  
September 2022  
Columbia University Press

Fossils allow us to picture the forms of life that inhabited the earth eons ago. But we long to know more: how did these animals actually behave? We are fascinated by the daily lives of our fellow creatures—how they reproduce and raise their young, how they hunt their prey or elude their predators, and more. What would it be like to see prehistoric animals as they lived and breathed?

From dinosaurs fighting to their deaths to elephant-sized burrowing ground sloths, this book takes readers on a global journey deep into the earth's past. *Locked in Time* showcases fifty of the most astonishing fossils ever found, brought together in five fascinating chapters that offer an unprecedented glimpse at the real-life behaviors of prehistoric animals. Dean R. Lomax examines the extraordinary direct evidence of fossils captured in the midst of everyday action, such as dinosaurs sitting on their eggs like birds, Jurassic flies preserved while mating, a *T. rex* infected by parasites. Each fossil, he reveals, tells a unique story about prehistoric life. Many recall behaviors typical of animals familiar to us today, evoking the chain of evolution that links all living things to their distant ancestors. *Locked in Time* allows us to see that fossils are not just inanimate objects: they can record the life stories of creatures as fully alive as any today. Striking and scientifically rigorous illustrations by renowned paleoartist Bob Nicholls bring these breathtaking moments to life.



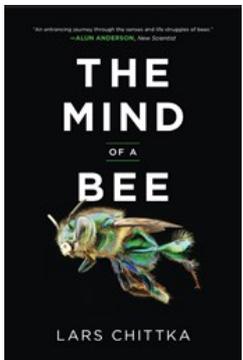
### The Mathematical Mechanic – Using Physical Reasoning to Solve Problems

Mark Levi  
9780691242057  
£15.99 • \$18.95 • Paperback  
Mathematics  
March 2023  
Princeton University Press

Everybody knows that mathematics is indispensable to physics—imagine where we'd be today if Einstein and Newton didn't have the math to back up their ideas. But how many people realize that physics can be used to produce many astonishing and strikingly elegant solutions in mathematics? Mark Levi shows how in this delightful book, treating readers to a host of entertaining problems and mind-bending puzzlers that will amuse and inspire their inner physicist.

Levi turns math and physics upside down, revealing how physics can simplify proofs and lead to quicker solutions and new theorems, and how physical solutions can illustrate why results are true in ways lengthy mathematical calculations never can. Did you know it's possible to derive the Pythagorean theorem by spinning a fish tank filled with water? Or that soap film holds the key to determining the cheapest container for a given volume? Or that the line of best fit for a data set can be found using a mechanical contraption made from a rod and springs? Levi demonstrates how to use physical intuition to solve these and other fascinating math problems. More than half the problems can be tackled by anyone with precalculus and basic geometry, while the more challenging problems require some calculus. This one-of-a-kind book explains physics and math concepts where needed, and includes an informative appendix of physical principles.

*The Mathematical Mechanic* will appeal to anyone interested in the little-known connections between mathematics and physics and how both endeavors relate to the world around us.



### The Mind of a Bee

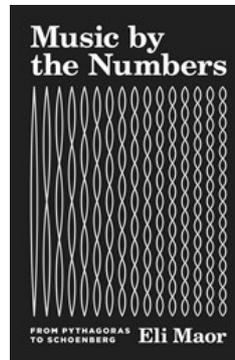
Lars Chittka  
9780691253893  
£16.99 • \$19.95 • Paperback  
Nature / Animals / Insects & Spiders  
October 2023  
Princeton University Press

#### A rich and surprising exploration of the intelligence of bees

Most of us are aware of the hive mind—the power of bees as an amazing collective. But do we know how uniquely intelligent bees are as individuals? In *The Mind of a Bee*, Lars Chittka draws from decades of research, including his own pioneering work, to argue that bees have remarkable cognitive abilities. He shows that they are profoundly smart, have distinct personalities, can recognize flowers and human faces, exhibit basic emotions, count, use simple tools, solve problems, and learn by observing others. They may even possess consciousness.

Taking readers deep into the sensory world of bees, Chittka illustrates how bee brains are unparalleled in the animal kingdom in terms of how much sophisticated material is packed into their tiny nervous systems. He looks at their innate behaviors and the ways their evolution as foragers may have contributed to their keen spatial memory. Chittka also examines the psychological differences between bees and the ethical dilemmas that arise in conservation and laboratory settings because bees feel and think. Throughout, he touches on the fascinating history behind the study of bee behavior.

Exploring an insect whose sensory experiences rival those of humans, *The Mind of a Bee* reveals the singular abilities of some of the world's most incredible creatures.



### Music by the Numbers – From Pythagoras to Schoenberg

Eli Maor  
9780691202969  
£14.99 • \$17.95 • Paperback  
Mathematics / History & Philosophy  
March 2020  
Princeton University Press

#### How music has influenced mathematics, physics, and astronomy from ancient Greece to the twentieth century

Music is filled with mathematical elements. The works of Bach are often said to possess a math-like logic, and Arnold Schoenberg, Iannis Xenakis, and Karlheinz Stockhausen wrote music explicitly based on mathematical principles. Yet Eli Maor argues that it is music that has had the greater influence on mathematics, not the other way around. Starting with Pythagoras, proceeding through Schoenberg, and bringing the story up to the present with contemporary string theory, *Music by the Numbers* tells a fascinating story of composers, scientists, inventors, and eccentrics who have played a role in the age-old relationship between music, mathematics, and the physical sciences. Weaving compelling stories of historical episodes with Maor's personal reflections as a mathematician and lover of classical music, this book will delight anyone who loves math and music.



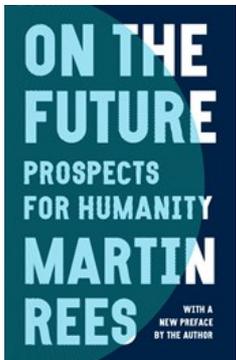
### The Nature of Space and Time

Stephen Hawking  
9780691168449  
£12.99 • \$15.95 • Paperback  
Science / Physics  
October 2015  
Princeton University Press

**From two of the world's great physicists—Stephen Hawking and Nobel laureate Roger Penrose—a lively debate about the nature of space and time**

Einstein said that the most incomprehensible thing about the universe is that it is comprehensible. But was he right? Can the quantum theory of fields and Einstein's general theory of relativity, the two most accurate and successful theories in all of physics, be united into a single quantum theory of gravity? Can quantum and cosmos ever be combined? In *The Nature of Space and Time*, two of the world's most famous physicists—Stephen Hawking (*A Brief History of Time*) and Roger Penrose (*The Road to Reality*)—debate these questions.

The authors outline how their positions have further diverged on a number of key issues, including the spatial geometry of the universe, inflationary versus cyclic theories of the cosmos, and the black-hole information-loss paradox. Though much progress has been made, Hawking and Penrose stress that physicists still have further to go in their quest for a quantum theory of gravity.



### On the Future - Prospects for Humanity

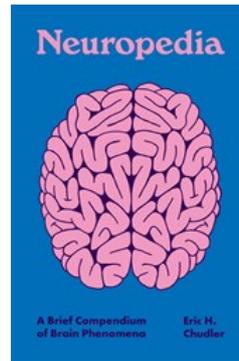
Martin Rees  
9780691231068  
£10.99 • \$12.95 • Paperback  
Science / Biotechnology  
October 2021  
Princeton University Press

**A provocative and inspiring look at the future of humanity and science from world-renowned scientist and bestselling author Martin Rees**

Humanity has reached a critical moment. Our world is unsettled and rapidly changing, and we face existential risks over the next century. Various outcomes—good and bad—are possible. Yet our approach to the future is characterized by short-term thinking, polarizing debates, alarmist rhetoric, and pessimism. In this short, exhilarating book, renowned scientist and bestselling author Martin Rees argues that humanity's prospects depend on our taking a very different approach to planning for tomorrow.

The future of humanity is bound to the future of science and hinges on how successfully we harness technological advances to address our challenges. If we are to use science to solve our problems while avoiding its dystopian risks, we must think rationally, globally, collectively, and optimistically about the long term. Advances in biotechnology, cybertechnology, robotics, and artificial intelligence—if pursued and applied wisely—could empower us to boost the developing and developed world and overcome the threats humanity faces on Earth, from climate change to nuclear war. At the same time, further advances in space science will allow humans to explore the solar system and beyond with robots and AI. But there is no "Plan B" for Earth—no viable alternative within reach if we do not care for our home planet.

Rich with fascinating insights into cutting-edge science and technology, this accessible book will captivate anyone who wants to understand the critical issues that will define the future of humanity on Earth and beyond.



### Neuropedia – A Brief Compendium of Brain Phenomena

Eric H. Chudler  
9780691213576  
£10.99 • \$16.95 • Hardcover  
Science / Life Sciences / Neuroscience  
November 2022  
Princeton University Press

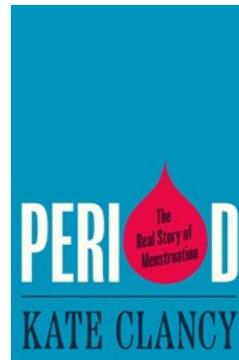
**A fun and fact-filled A–Z treasury for anyone with a head on their shoulders**

*Neuropedia* journeys into the mysteries and marvels of the three pounds of tissue between your ears—the brain. Eric Chudler takes you on a breathtaking tour of the nervous system with dozens of entries that explore the structure and function of the brain and cover topics such as the spinal cord and nerve cells, the methods of neuroscientific research, and the visionary scientists who have dedicated their lives to understanding what makes each of us who we are.

The brain has fascinated and puzzled researchers, physicians, and philosophers for thousands of years and captivated us with each new discovery. This compendium of neuroscientific wonders is brimming with facts and insights, helping us to make sense of our current understanding of the nervous system while identifying the frontiers in our knowledge that remain unexplored. Chudler guides readers through a variety of rare and common neurological disorders such as alien hand disorder, Capgras syndrome, Alzheimer's disease, Parkinson's disease, and stroke, and discusses the latest brain-imaging methods used to diagnose them. He discusses neurochemicals, neurotoxins, and lifesaving drugs, and offers bold perspectives on human consciousness that enable us to better appreciate our place in nature.

With marvelous illustrations by Kelly Chudler, *Neuropedia* is an informative and entertaining trip into the inner world of the brain.

- Features a cloth cover with an elaborate foil-stamped design



### Period – The Real Story of Menstruation

Kate Clancy  
9780691191317  
£22.00 • \$27.95 • Hardcover  
Science / Life Sciences / Biology  
April 2023  
Princeton University Press

**A bold and revolutionary perspective on the science and cultural history of menstruation**

Menstruation is something half the world does for a week at a time, for months and years on end, yet it remains largely misunderstood. Scientists once thought of an individual's period as useless, and some doctors still believe it's unsafe for a menstruating person to swim in the ocean wearing a tampon. *Period* counters the false theories that have long defined the study of the uterus, exposing the eugenic history of gynecology while providing an intersectional feminist perspective on menstruation science.

Blending interviews and personal experience with engaging stories from her own pioneering research, Kate Clancy challenges a host of myths and false assumptions. There is no such a thing as a "normal" menstrual cycle. In fact, menstrual cycles are incredibly variable and highly responsive to environmental and psychological stressors. Clancy takes up a host of timely issues surrounding menstruation, from bodily autonomy, menstrual hygiene, and the COVID-19 vaccine to the ways racism, sexism, and medical betrayal warp public perceptions of menstruation and erase it from public life.

Offering a revelatory new perspective on one of the most captivating biological processes in the human body, *Period* will change the way you think about the past, present, and future of periods.



### Philosophy of Physics – Space and Time

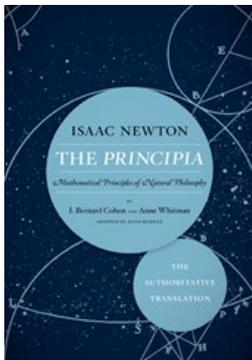
Tim Maudlin  
9780691165714

£20.00 • \$24.95 • Paperback  
Science / Philosophy & Social Aspects  
June 2015  
Princeton University Press

#### Philosophical foundations of the physics of space-time

This concise book introduces nonphysicists to the core philosophical issues surrounding the nature and structure of space and time, and is also an ideal resource for physicists interested in the conceptual foundations of space-time theory. Tim Maudlin's broad historical overview examines Aristotelian and Newtonian accounts of space and time, and traces how Galileo's conceptions of relativity and space-time led to Einstein's special and general theories of relativity. Maudlin explains special relativity with enough detail to solve concrete physical problems while presenting general relativity in more qualitative terms. Additional topics include the Twins Paradox, the physical aspects of the Lorentz-FitzGerald contraction, the constancy of the speed of light, time travel, the direction of time, and more.

- Introduces nonphysicists to the philosophical foundations of space-time theory
- Provides a broad historical overview, from Aristotle to Einstein
- Explains special relativity geometrically, emphasizing the intrinsic structure of space-time
- Covers the Twins Paradox, Galilean relativity, time travel, and more
- Requires only basic algebra and no formal knowledge of physics



### The Principia: The Authoritative Translation – Mathematical Principles of Natural Philosophy

Isaac Newton  
9780520290747

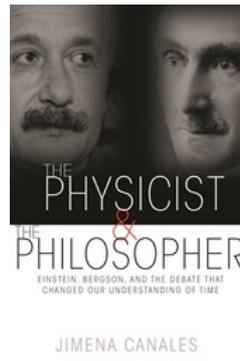
£16.99 • \$19.95 • Paperback  
Science / Physics / Mathematical &  
Computational  
February 2016  
University of California Press

In his monumental 1687 work, *Philosophiæ Naturalis Principia Mathematica*, known familiarly as the *Principia*, Isaac Newton laid out in mathematical terms the principles of time, force, and motion that have guided the development of modern physical science. Even after more than three centuries and the revolutions of Einsteinian relativity and quantum mechanics, Newtonian physics continues to account for many of the phenomena of the observed world, and Newtonian celestial dynamics is used to determine the orbits of our space vehicles.

This authoritative, modern translation by I. Bernard Cohen and Anne Whitman, the first in more than 285 years, is based on the 1726 edition, the final revised version approved by Newton; it includes extracts from the earlier editions, corrects errors found in earlier versions, and replaces archaic English with contemporary prose and up-to-date mathematical forms.

Newton's principles describe acceleration, deceleration, and inertial movement; fluid dynamics; and the motions of the earth, moon, planets, and comets. A great work in itself, the *Principia* also revolutionized the methods of scientific investigation. It set forth the fundamental three laws of motion and the law of universal gravity, the physical principles that account for the Copernican system of the world as emended by Kepler, thus effectively ending controversy concerning the Copernican planetary system.

The translation-only edition of this preeminent work is truly accessible for today's scientists, scholars, and students.



### The Physicist and the Philosopher – Einstein, Bergson, and the Debate That Changed Our Understanding of Time

Jimena Canales  
9780691173177

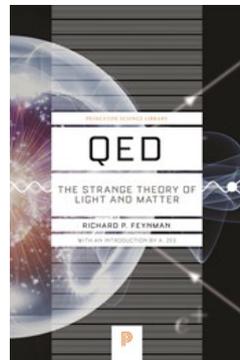
£22.00 • \$26.95 • Paperback  
Science / History  
October 2016  
Princeton University Press

#### The explosive debate that transformed our views about time and scientific truth

On April 6, 1922, in Paris, Albert Einstein and Henri Bergson publicly debated the nature of time. Einstein considered Bergson's theory of time to be a soft, psychological notion, irreconcilable with the quantitative realities of physics. Bergson, who gained fame as a philosopher by arguing that time should not be understood exclusively through the lens of science, criticized Einstein's theory of time for being a metaphysics grafted on to science, one that ignored the intuitive aspects of time. *The Physicist and the Philosopher* tells the remarkable story of how this explosive debate transformed our understanding of time and drove a rift between science and the humanities that persists today.

Jimena Canales introduces readers to the revolutionary ideas of Einstein and Bergson, describes how they dramatically collided in Paris, and traces how this clash of worldviews reverberated across the twentieth century. She shows how it provoked responses from figures such as Bertrand Russell and Martin Heidegger, and carried repercussions for American pragmatism, logical positivism, phenomenology, and quantum mechanics. Canales explains how the new technologies of the period—such as wristwatches, radio, and film—helped to shape people's conceptions of time and further polarized the public debate. She also discusses how Bergson and Einstein, toward the end of their lives, each reflected on his rival's legacy—Bergson during the Nazi occupation of Paris and Einstein in the context of the first hydrogen bomb explosion.

*The Physicist and the Philosopher* is a magisterial and revealing account that shows how scientific truth was placed on trial in a divided century marked by a new sense of time.

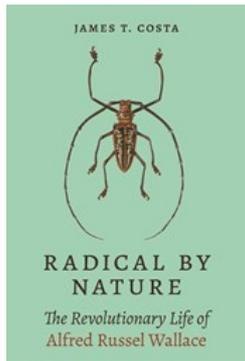


### QED – The Strange Theory of Light and Matter

Richard P. Feynman  
9780691164090

£16.99 • \$19.95 • Paperback  
Science / Physics / Quantum Theory  
October 2014  
Princeton University Press

Celebrated for his brilliantly quirky insights into the physical world, Nobel laureate Richard Feynman also possessed an extraordinary talent for explaining difficult concepts to the general public. Here Feynman provides a classic and definitive introduction to QED (namely, quantum electrodynamics), that part of quantum field theory describing the interactions of light with charged particles. Using everyday language, spatial concepts, visualizations, and his renowned "Feynman diagrams" instead of advanced mathematics, Feynman clearly and humorously communicates both the substance and spirit of QED to the layperson. A *Zee's* introduction places Feynman's book and his seminal contribution to QED in historical context and further highlights Feynman's uniquely appealing and illuminating style.



### Radical by Nature – The Revolutionary Life of Alfred Russel Wallace

James T. Costa

9780691233796

£35.00 • \$39.95 • Hardcover

Biography & Autobiography / Science &

Technology

March 2023

Princeton University Press

**A major new biography of the brilliant naturalist, traveler, humanitarian, and codiscoverer of natural selection**

Alfred Russel Wallace (1823–1913) was perhaps the most famed naturalist of the Victorian age. His expeditions to remote Amazonia and southeast Asia were the stuff of legend. A collector of thousands of species new to science, he shared in the discovery of natural selection and founded the discipline of evolutionary biogeography.

*Radical by Nature* tells the story of Wallace's epic life and achievements, from his stellar rise from humble origins to his complicated friendship with Charles Darwin and other leading scientific lights of Britain to his devotion to social causes and movements that threatened to alienate him from scientific society.

James Costa draws on letters, notebooks, and journals to provide a multifaceted account of a revolutionary life in science as well as Wallace's family life. He shows how the self-taught Wallace doggedly pursued bold, even radical ideas that caused a seismic shift in the natural sciences, and how he also courted controversy with nonscientific pursuits such as spiritualism and socialism. Costa describes Wallace's courageous social advocacy of women's rights, labor reform, and other important issues. He also sheds light on Wallace's complex relationship with Darwin, describing how Wallace graciously applauded his friend and rival, becoming one of his most ardent defenders.

Weaving a revelatory narrative with the latest scholarship, *Radical by Nature* paints a mesmerizing portrait of a multifaceted thinker driven by a singular passion for science, a commitment to social justice, and a lifelong sense of wonder.



### The Scientist's Guide to Writing, 2nd Edition – How to Write More Easily and Effectively throughout Your Scientific Career

Stephen B. Heard

9780691219189

£22.00 • \$26.95 • Paperback

Science / Reference

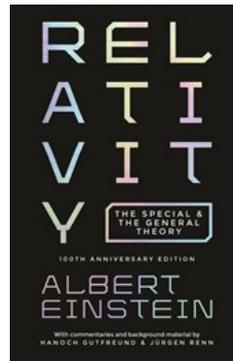
May 2022

Princeton University Press

**An updated and expanded edition of the acclaimed writing guide for scientists**

*The Scientist's Guide to Writing* explains the essential techniques that students, postdocs, and early-career scientists need to write more clearly, efficiently, and easily. Now fully updated and expanded, this incisive primer offers practical advice on such topics as generating and maintaining writing momentum, structuring a scientific paper, revising a first draft, handling citations, responding to peer reviews, managing coauthorships, and more. The ability to write clearly is critical to any scientific career. *The Scientist's Guide to Writing* shows scientists how to become better writers so that their ideas have the greatest possible impact.

- New chapters discuss effective reading, choosing the right journal for your research, and the advantages and disadvantages of posting preprints
- Provides additional advice on reporting statistical results, dealing with conflicting peer reviews, managing coauthorships, writing with English as an additional language, and more
- Emphasizes writing as a process, not just a product
- Encourages habits that improve motivation and productivity
- Offers detailed guidance on submission, review, revision, and publication
- Includes a wealth of new exercises



### Relativity – The Special and the General Theory – 100th Anniversary Edition

Albert Einstein

9780691191812

£14.99 • \$17.95 • Paperback

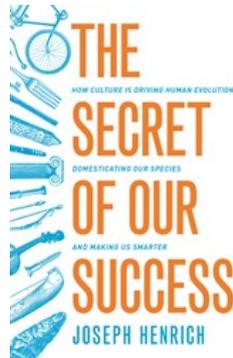
Science / Physics / Relativity

March 2019

Princeton University Press

**A handsome annotated edition of Einstein's celebrated book on relativity**

After completing the final version of his general theory of relativity in November 1915, Albert Einstein wrote *Relativity*. Intended for a popular audience, the book remains one of the most lucid explanations of the special and general theories ever written. This edition of Einstein's celebrated book features an authoritative English translation of the text along with commentaries by Hanoch Gutfreund and Jürgen Renn that examine the evolution of Einstein's thinking and cast his ideas in a modern context. Providing invaluable insight into one of the greatest scientific minds of all time, the book also includes a unique survey of the introductions from past editions, covers from selected early editions, a letter from Walther Rathenau to Einstein discussing the book, and a revealing sample from Einstein's original handwritten manuscript.



### The Secret of Our Success – How Culture Is Driving Human Evolution, Domesticating Our Species, and Making Us Smarter

Joseph Henrich

9780691178431

£16.99 • \$19.95 • Paperback

Science / Cognitive Science

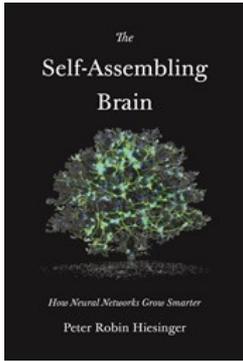
November 2017

Princeton University Press

**How our collective intelligence has helped us to evolve and prosper**

Humans are a puzzling species. On the one hand, we struggle to survive on our own in the wild, often failing to overcome even basic challenges, like obtaining food, building shelters, or avoiding predators. On the other hand, human groups have produced ingenious technologies, sophisticated languages, and complex institutions that have permitted us to successfully expand into a vast range of diverse environments. What has enabled us to dominate the globe, more than any other species, while remaining virtually helpless as lone individuals? This book shows that the secret of our success lies not in our innate intelligence, but in our collective brains—on the ability of human groups to socially interconnect and learn from one another over generations.

Drawing insights from lost European explorers, clever chimpanzees, mobile hunter-gatherers, neuroscientific findings, ancient bones, and the human genome, Joseph Henrich demonstrates how our collective brains have propelled our species' genetic evolution and shaped our biology. Our early capacities for learning from others produced many cultural innovations, such as fire, cooking, water containers, plant knowledge, and projectile weapons, which in turn drove the expansion of our brains and altered our physiology, anatomy, and psychology in crucial ways. Later on, some collective brains generated and recombined powerful concepts, such as the lever, wheel, screw, and writing, while also creating the institutions that continue to alter our motivations and perceptions. Henrich shows how our genetics and biology are inextricably interwoven with cultural evolution, and how culture-gene interactions launched our species on an extraordinary evolutionary trajectory.



### The Self-Assembling Brain – How Neural Networks Grow Smarter

Peter Robin Hiesinger

9780691241692

£20.00 • \$24.95 • Paperback

Science / Life Sciences / Neuroscience

January 2023

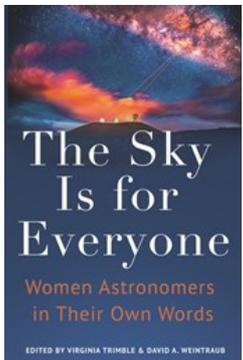
Princeton University Press

#### What neurobiology and artificial intelligence tell us about how the brain builds itself

How does a neural network become a brain? While neurobiologists investigate how nature accomplishes this feat, computer scientists interested in artificial intelligence strive to achieve this through technology. *The Self-Assembling Brain* tells the stories of both fields, exploring the historical and modern approaches taken by the scientists pursuing answers to the quandary: What information is necessary to make an intelligent neural network?

As Peter Robin Hiesinger argues, “the information problem” underlies both fields, motivating the questions driving forward the frontiers of research. How does genetic information unfold during the years-long process of human brain development—and is there a quicker path to creating human-level artificial intelligence? Is the biological brain just messy hardware, which scientists can improve upon by running learning algorithms on computers? Can AI bypass the evolutionary programming of “grown” networks? Through a series of fictional discussions between researchers across disciplines, complemented by in-depth seminars, Hiesinger explores these tightly linked questions, highlighting the challenges facing scientists, their different disciplinary perspectives and approaches, as well as the common ground shared by those interested in the development of biological brains and AI systems. In the end, Hiesinger contends that the information content of biological and artificial neural networks must unfold in an algorithmic process requiring time and energy. There is no genome and no blueprint that depicts the final product. The self-assembling brain knows no shortcuts.

Written for readers interested in advances in neuroscience and artificial intelligence, *The Self-Assembling Brain* looks at how neural networks grow smarter.



### The Sky Is for Everyone – Women Astronomers in Their Own Words

9780691253916

£16.99 • \$19.95 • Paperback

Science / Space Science / Astronomy

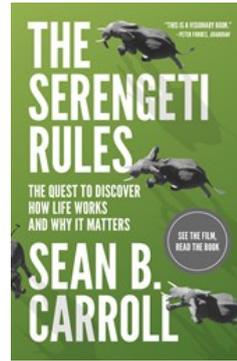
October 2023

Princeton University Press

#### An inspiring anthology of writings by trailblazing women astronomers from around the globe

*The Sky Is for Everyone* is an internationally diverse collection of autobiographical essays by women who broke down barriers and changed the face of modern astronomy. Virginia Trimble and David Weintraub vividly describe how, before 1900, a woman who wanted to study the stars had to have a father, brother, or husband to provide entry, and how the considerable intellectual skills of women astronomers were still not enough to enable them to pry open doors of opportunity for much of the twentieth century. After decades of difficult struggles, women are closer to equality in astronomy than ever before. Trimble and Weintraub bring together the stories of the tough and determined women who flung the doors wide open. Taking readers from 1960 to today, this triumphant anthology serves as an inspiration to current and future generations of women scientists while giving voice to the history of a transformative era in astronomy.

With contributions by Neta A. Bahcall, Beatriz Barbuy, Ann Merchant Boesgaard, Jocelyn Bell Burnell, Catherine Cesarsky, Poonam Chandra, Xuefei Chen, Cathie Clarke, Judith Gamora Cohen, France Anne Córdova, Anne Pyne Cowley, Božena Czerny, Wendy L. Freedman, Yilen Gómez Maqueo Chew, Gabriela González, Saeko S. Hayashi, Martha P. Haynes, Roberta M. Humphreys, Vicky Kalogera, Gillian Knapp, Shazrene S. Mohamed, Carole Mundell, Priyamvada Natarajan, Dara J. Norman, Hiranya Peiris, Judith Lynn Pipher, Dina Prialnik, Annela I. Sargent, Sara Seager, Gražina Tautvaišienė, Silvia Torres-Peimbert, Virginia Trimble, Meg Urry, Ewine F. van Dishoeck, Patricia Ann Whitelock, Sidney Wolff, and Rosemary F. G. Wyse.



### The Serengeti Rules – The Quest to Discover How Life Works and Why It Matters – With a new Q&A with the author

Sean B. Carroll

9780691175683

£14.99 • \$17.95 • Paperback

Science / Life Sciences / Biology

March 2017

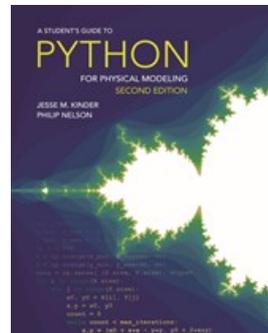
Princeton University Press

#### Now the subject of an Emmy Award–winning film the *New York Times* calls “spellbinding”

How does life work? How does nature produce the right numbers of zebras and lions on the African savanna, or fish in the ocean? How do our bodies produce the right numbers of cells in our organs and bloodstream? In *The Serengeti Rules*, award-winning biologist and author Sean Carroll tells the stories of the pioneering scientists who sought the answers to such simple yet profoundly important questions, and shows how their discoveries matter for our health and the health of the planet we depend upon.

One of the most important revelations about the natural world is that everything is regulated—there are rules that regulate the amount of every molecule in our bodies and rules that govern the numbers of every animal and plant in the wild. And the most surprising revelation about the rules that regulate life at such different scales is that they are remarkably similar—there is a common underlying logic of life. Carroll recounts how our deep knowledge of the rules and logic of the human body has spurred the advent of revolutionary life-saving medicines, and makes the compelling case that it is now time to use the Serengeti Rules to heal our ailing planet.

A bold and inspiring synthesis by one of our most accomplished biologists and gifted storytellers, *The Serengeti Rules* is the first book to illuminate how life works at vastly different scales. Read it and you will never look at the world the same way again.



### A Student's Guide to Python for Physical Modeling – Second Edition

Jesse M. Kinder

9780691223650

£22.00 • \$26.95 • Paperback

Science / Physics

October 2021

Princeton University Press

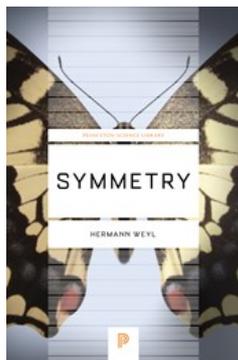
#### A fully updated tutorial on the basics of the Python programming language for science students

Python is a computer programming language that has gained popularity throughout the sciences. This fully updated second edition of *A Student's Guide to Python for Physical Modeling* aims to help you, the student, teach yourself enough of the Python programming language to get started with physical modeling. You will learn how to install an open-source Python programming environment and use it to accomplish many common scientific computing tasks: importing, exporting, and visualizing data; numerical analysis; and simulation. No prior programming experience is assumed.

This guide introduces a wide range of useful tools, including:

- Basic Python programming and scripting
- Numerical arrays
- Two- and three-dimensional graphics
- Animation
- Monte Carlo simulations
- Numerical methods, including solving ordinary differential equations
- Image processing

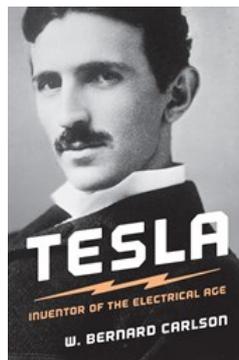
Numerous code samples and exercises—with solutions—illustrate new ideas as they are introduced. This guide also includes supplemental online resources: code samples, data sets, tutorials, and more. This edition includes new material on symbolic calculations with SymPy, an introduction to



### Symmetry

Hermann Weyl  
9780691173252  
£14.99 • \$17.95 • Paperback  
Mathematics  
October 2016  
Princeton University Press

*Symmetry* is a classic study of symmetry in mathematics, the sciences, nature, and art from one of the twentieth century's greatest mathematicians. Hermann Weyl explores the concept of symmetry beginning with the idea that it represents a harmony of proportions, and gradually departs to examine its more abstract varieties and manifestations—as bilateral, translatory, rotational, ornamental, and crystallographic. Weyl investigates the general abstract mathematical idea underlying all these special forms, using a wealth of illustrations as support. *Symmetry* is a work of seminal relevance that explores the great variety of applications and importance of symmetry.



### Tesla - Inventor of the Electrical Age

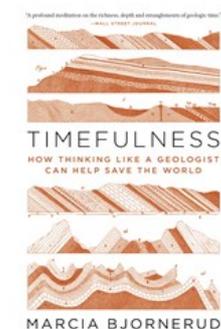
W. Bernard Carlson  
9780691165615  
£17.99 • \$20.95 • Paperback  
Biography & Autobiography / Science & Technology  
May 2015  
Princeton University Press

#### The definitive account of Tesla's life and work

Nikola Tesla was a major contributor to the electrical revolution that transformed daily life at the turn of the twentieth century. His inventions, patents, and theoretical work formed the basis of modern AC electricity, and contributed to the development of radio and television. Like his competitor Thomas Edison, Tesla was one of America's first celebrity scientists, enjoying the company of New York high society and dazzling the likes of Mark Twain with his electrical demonstrations. An astute self-promoter and gifted showman, he cultivated a public image of the eccentric genius. Even at the end of his life when he was living in poverty, Tesla still attracted reporters to his annual birthday interview, regaling them with claims that he had invented a particle-beam weapon capable of bringing down enemy aircraft.

Plenty of biographies glamorize Tesla and his eccentricities, but until now none has carefully examined what, how, and why he invented. In this groundbreaking book, W. Bernard Carlson demystifies the legendary inventor, placing him within the cultural and technological context of his time, and focusing on his inventions themselves as well as the creation and maintenance of his celebrity. Drawing on original documents from Tesla's private and public life, Carlson shows how he was an "idealist" inventor who sought the perfect experimental realization of a great idea or principle, and who skillfully sold his inventions to the public through mythmaking and illusion.

This major biography sheds new light on Tesla's visionary approach to invention and the business strategies behind his most important technological breakthroughs.



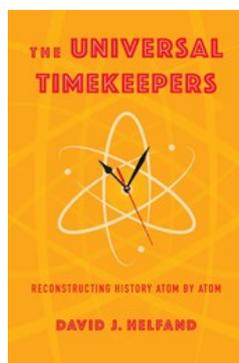
### Timefulness - How Thinking Like a Geologist Can Help Save the World

Marcia Bjornerud  
9780691202631  
£13.99 • \$16.95 • Paperback  
Science / Earth Sciences / Geology  
January 2020  
Princeton University Press

#### Why an awareness of Earth's temporal rhythms is critical to our planetary survival

Few of us have any conception of the enormous timescales of our planet's long history, and this narrow perspective underlies many of the environmental problems we are creating. The lifespan of Earth can seem unfathomable compared to the brevity of human existence, but this view of time denies our deep roots in Earth's history—and the magnitude of our effects on the planet. *Timefulness* reveals how knowing the rhythms of Earth's deep past and conceiving of time as a geologist does can give us the perspective we need for a more sustainable future. Featuring illustrations by Haley Hagerman, this compelling book offers a new way of thinking about our place in time, showing how our everyday lives are shaped by processes that vastly predate us, and how our actions today will in turn have consequences that will outlast us by generations.

This edition includes discussion questions for reading groups.



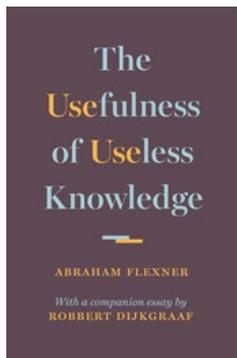
### The Universal Timekeepers - Reconstructing History Atom by Atom

David Helfand  
9780231210980  
£20.00 • \$24.95 • Hardcover  
Science / Physics / Atomic & Molecular  
October 2023  
Columbia University Press

Atoms are unfathomably tiny. It takes fifteen million trillion of them to make up a single poppy seed—give or take a few billion. And there's hardly anything to them: atoms are more than 99.9999999999 percent empty space. Yet scientists have learned to count these slivers of near nothingness with precision and to peer into their internal states. In looking so closely, we have learned that atoms, because of their inimitable signatures and imperturbable internal clocks, are little archives holding the secrets of the past.

David J. Helfand reconstructs the history of the universe—back to its first microsecond 13.8 billion years ago—with the help of atoms. He shows how, by using detectors and reactors, microscopes and telescopes, we can decode the tales these infinitesimal particles tell, answering questions such as: Is a medieval illustrated prayer book real or forged? How did maize cultivation spread from the highlands of central Mexico to New England? What was Earth's climate like before humans emerged? Where can we find clues to identify the culprit in the demise of the dinosaurs? When did our planet and solar system form? Can we trace the births of atoms in the cores of massive stars or even glimpse the origins of the universe itself?

A lively and inviting introduction to the building blocks of everything we know, *The Universal Timekeepers* demonstrates the power of science to unveil the mysteries of unreachably remote times and places.



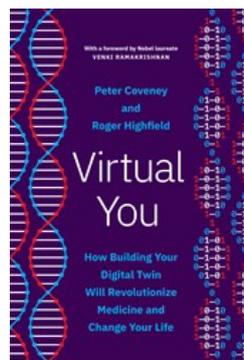
### The Usefulness of Useless Knowledge

Abraham Flexner  
9780691174761  
£8.99 • \$10.95 • Hardcover  
Science / Philosophy & Social Aspects  
February 2017  
Princeton University Press

**A short, provocative book about why "useless" science often leads to humanity's greatest technological breakthroughs**

A forty-year tightening of funding for scientific research has meant that resources are increasingly directed toward applied or practical outcomes, with the intent of creating products of immediate value. In such a scenario, it makes sense to focus on the most identifiable and urgent problems, right? Actually, it doesn't. In his classic essay "The Usefulness of Useless Knowledge," Abraham Flexner, the founding director of the Institute for Advanced Study in Princeton and the man who helped bring Albert Einstein to the United States, describes a great paradox of scientific research. The search for answers to deep questions, motivated solely by curiosity and without concern for applications, often leads not only to the greatest scientific discoveries but also to the most revolutionary technological breakthroughs. In short, no quantum mechanics, no computer chips.

This brief book includes Flexner's timeless 1939 essay alongside a new companion essay by Robert Dijkgraaf, the Institute's current director, in which he shows that Flexner's defense of the value of "the unobstructed pursuit of useless knowledge" may be even more relevant today than it was in the early twentieth century. Dijkgraaf describes how basic research has led to major transformations in the past century and explains why it is an essential precondition of innovation and the first step in social and cultural change. He makes the case that society can achieve deeper understanding and practical progress today and tomorrow only by truly valuing and substantially funding the curiosity-driven "pursuit of useless knowledge" in both the sciences and the humanities.



### Virtual You – How Building Your Digital Twin Will Revolutionize Medicine and Change Your Life

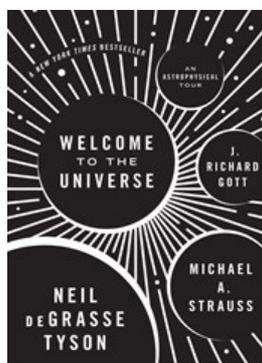
Peter Coveney  
9780691223278  
£25.00 • \$29.95 • Hardcover  
Science / Life Sciences / Biology  
March 2023  
Princeton University Press

**The visionary science behind the digital human twins that will enhance our health and our future**

*Virtual You* is a panoramic account of efforts by scientists around the world to build digital twins of human beings, from cells and tissues to organs and whole bodies. These virtual copies will usher in a new era of personalized medicine, one in which your digital twin can help predict your risk of disease, participate in virtual drug trials, shed light on the diet and lifestyle changes that are best for you, and help identify therapies to enhance your well-being and extend your lifespan—but thorny challenges remain.

In this deeply illuminating book, Peter Coveney and Roger Highfield reveal what it will take to build a virtual, functional copy of a person in five steps. Along the way, they take you on a fantastic voyage through the complexity of the human body, describing the latest scientific and technological advances—from multiscale modeling to extraordinary new forms of computing—that will make "virtual you" a reality, while also considering the ethical questions inherent to realizing truly predictive medicine.

With an incisive foreword by Nobel Prize-winning biologist Venki Ramakrishnan, *Virtual You* is science at its most astounding, showing how our virtual twins and even whole populations of virtual humans promise to transform our health and our lives in the coming decades.



### Welcome to the Universe – An Astrophysical Tour

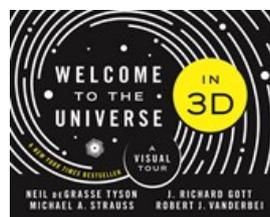
Neil deGrasse Tyson  
9780691157245  
£35.00 • \$39.95 • Hardcover  
Science / Physics / Astrophysics  
October 2016  
Princeton University Press

**The *New York Times* bestselling tour of the cosmos from three of today's leading astrophysicists**

*Welcome to the Universe* is a personal guided tour of the cosmos by three of today's leading astrophysicists. Inspired by the enormously popular introductory astronomy course that Neil deGrasse Tyson, Michael A. Strauss, and J. Richard Gott taught together at Princeton, this book covers it all—from planets, stars, and galaxies to black holes, wormholes, and time travel.

Describing the latest discoveries in astrophysics, the informative and entertaining narrative propels you from our home solar system to the outermost frontiers of space. How do stars live and die? Why did Pluto lose its planetary status? What are the prospects of intelligent life elsewhere in the universe? How did the universe begin? Why is it expanding and why is its expansion accelerating? Is our universe alone or part of an infinite multiverse? Answering these and many other questions, the authors open your eyes to the wonders of the cosmos, sharing their knowledge of how the universe works.

Breathtaking in scope and stunningly illustrated throughout, *Welcome to the Universe* is for those who hunger for insights into our evolving universe that only world-class astrophysicists can provide.



### Welcome to the Universe in 3D – A Visual Tour

Neil deGrasse Tyson  
9780691194073  
£22.00 • \$29.95 • Hardcover  
Science / Physics / Astrophysics  
April 2022  
Princeton University Press

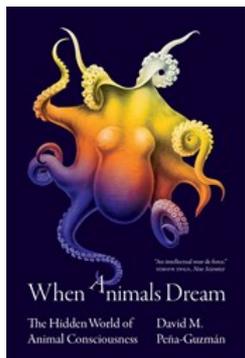
***New York Times* bestseller**

**Journey into the universe through the most spectacular sights in astronomy in stereoscopic 3D**

*Welcome to the Universe in 3D* takes you on a grand tour of the observable universe, guiding you through the most spectacular sights in the cosmos—in breathtaking 3D. Presenting a rich array of stereoscopic color images, which can be viewed in 3D using a special stereo viewer that folds easily out of the cover of the book, this book reveals your cosmic environment as you have never seen it before.

Astronomy is the story of how humankind's perception of the two-dimensional dome of the sky evolved into a far deeper comprehension of an expanding three-dimensional cosmos. This book invites you to take part in this story by exploring the universe in depth, as revealed by cutting-edge astronomical research and observations. You will journey from the Moon through the solar system, out to exoplanets, distant nebulas, and galaxy clusters, until you finally reach the cosmic microwave background radiation (or CMB), the most distant light we can observe. The distances to these celestial wonders range from 1.3 light-seconds to 13.8 billion light-years. Along the way, the authors explain the fascinating features of what you are seeing, including how the 3D images were made using the same technique that early astronomers devised to measure distances to objects in space.

The dramatic 3D images in this one-of-a-kind book will astonish you, extending your vision out to the farthest reaches of the universe. You will never look up into the night sky the same way again.



### When Animals Dream – The Hidden World of Animal Consciousness

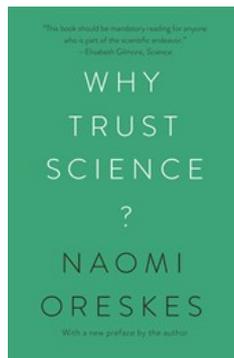
David M. Peña-Guzmán  
9780691227061  
£14.99 • \$17.95 • Paperback  
Philosophy / Ethics & Moral Philosophy  
September 2023  
Princeton University Press

#### A spellbinding look at the philosophical and moral implications of animal dreaming

Are humans the only dreamers on Earth? What goes on in the minds of animals when they sleep? *When Animals Dream* brings together behavioral and neuroscientific research on animal sleep with philosophical theories of dreaming. It shows that dreams provide an invaluable window into the cognitive and emotional lives of nonhuman animals, giving us access to a seemingly inaccessible realm of animal experience.

David Peña-Guzmán uncovers evidence of animal dreaming throughout the scientific literature, suggesting that many animals run “reality simulations” while asleep, with a dream-ego moving through a dynamic and coherent dreamscape. He builds a convincing case for animals as conscious beings and examines the thorny scientific, philosophical, and ethical questions it raises. Once we accept that animals dream, we incur a host of moral obligations and have no choice but to rethink our views about who animals are and the interior lives they lead.

A mesmerizing journey into the otherworldly domain of nonhuman consciousness, *When Animals Dream* carries profound implications for contemporary debates about animal cognition, animal ethics, and animal rights, challenging us to regard animals as beings who matter, and for whom things matter.

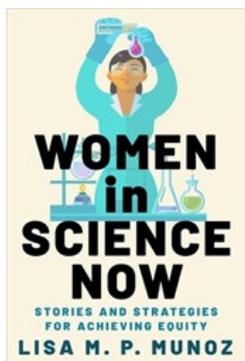


### Why Trust Science?

Naomi Oreskes  
9780691212265  
£15.99 • \$18.95 • Paperback  
Science / Philosophy & Social Aspects  
May 2021  
Princeton University Press

#### Why the social character of scientific knowledge makes it trustworthy

Are doctors right when they tell us vaccines are safe? Should we take climate experts at their word when they warn us about the perils of global warming? Why should we trust science when so many of our political leaders don't? Naomi Oreskes offers a bold and compelling defense of science, revealing why the social character of scientific knowledge is its greatest strength—and the greatest reason we can trust it. Tracing the history and philosophy of science from the late nineteenth century to today, this timely and provocative book features a new preface by Oreskes and critical responses by climate experts Ottmar Edenhofer and Martin Kowarsch, political scientist Jon Krosnick, philosopher of science Marc Lange, and science historian Susan Lindee, as well as a foreword by political theorist Stephen Macedo.



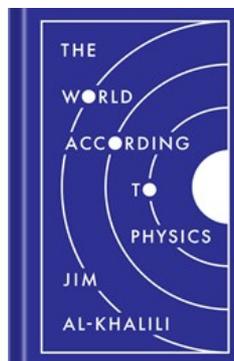
### Women in Science Now – Stories and Strategies for Achieving Equity

Lisa M. P. Munoz  
9780231206143  
£20.00 • \$24.95 • Hardcover  
Science / Philosophy & Social Aspects  
November 2023  
Columbia University Press

Women working in the sciences face obstacles at virtually every step along their career paths. From subtle slights to blatant biases, deep systemic problems block women from advancing or push them out of science and technology entirely.

*Women in Science Now* examines solutions to this persistent gender gap, offering new perspectives on how to make science more equitable and inclusive for all. This book shares stories and insights of women from a range of backgrounds working in various disciplines, illustrating the journeys that brought them to the sciences, the challenges they faced along the way, and the important contributions they have made to their fields. Lisa M. P. Munoz combines these narratives with a wealth of data to illuminate the size and scope of the challenges women scientists face, while highlighting research-based solutions to help overcome these obstacles. She presents groundbreaking studies in social psychology and organizational behavior that are informing novel approaches for combating historic and ongoing inequities.

Through a combined focus on personal experiences and social-science research, this timely book provides both a path toward greater gender equity and an inspiring vision of science and scientists.



### The World According to Physics

Jim Al-khalili  
9780691182308  
£12.99 • \$17.95 • Hardcover  
Science / Physics  
February 2020  
Princeton University Press

#### Quantum physicist, *New York Times* bestselling author, and BBC host Jim Al-Khalili offers a fascinating and illuminating look at what physics reveals about the world

Shining a light on the most profound insights revealed by modern physics, Jim Al-Khalili invites us all to understand what this crucially important science tells us about the universe and the nature of reality itself.

Al-Khalili begins by introducing the fundamental concepts of space, time, energy, and matter, and then describes the three pillars of modern physics—quantum theory, relativity, and thermodynamics—showing how all three must come together if we are ever to have a full understanding of reality. Using wonderful examples and thought-provoking analogies, Al-Khalili illuminates the physics of the extreme cosmic and quantum scales, the speculative frontiers of the field, and the physics that underpins our everyday experiences and technologies, bringing the reader up to speed with the biggest ideas in physics in just a few sittings. Physics is revealed as an intrepid human quest for ever more foundational principles that accurately explain the natural world we see around us, an undertaking guided by core values such as honesty and doubt. The knowledge discovered by physics both empowers and humbles us, and still, physics continues to delve valiantly into the unknown.

Making even the most enigmatic scientific ideas accessible and captivating, this deeply insightful book illuminates why physics matters to everyone and calls one and all to share in the profound adventure of seeking truth in the world around us.

<hr/> <b>AI Needs You – How We Can Change AI's Future and Save Our Own</b>	Page • 1	<hr/> <b>Alan Turing – The Enigma – The Book That Inspired the Film The Imitation Game – Updated Edition</b>	Page • 8
<hr/> <b>At Every Depth – Our Growing Knowledge of the Changing Oceans</b>	Page • 1	<hr/> <b>Attraction, Love, Sex – The Inside Story</b>	Page • 8
<hr/> <b>The Beauty of Falling – A Life in Pursuit of Gravity</b>	Page • 1	<hr/> <b>A Brain for Innovation – The Neuroscience of Imagination and Abstract Thinking</b>	Page • 1
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