

## SUMMER READING

## To While Away Some Time...

WE ASKED A NUMBER OF OUR ADVISERS, REVIEWERS, and colleagues what thought-provoking and enjoyable books they would recommend for summer reading. We suggested that the books have some link (however tenuous) to science, but that they could be factual or fiction. And while admitting a bias toward titles from recent years, we agreed not to ignore older classics. Here is a selection from the results of our queries, along with brief explanations for each recommendation. We hope that you will find something on the list to reward you for a few hours of reading while reclining on a beach, settled in for a long flight, or lazing in a hammock. If you wish to rest your eyes as well, several of the titles on the list are available as audiobooks. And if you find yourself reading some other book this summer that you can't put down, we would like to hear from you.

—Barbara Jasny and Sherman Suter



► **David Mitchell, *Ghostwritten: A Novel in Nine Parts***. Mitchell writes meaty, intelligent, and engrossing books of nested stories that are truly global in scope. This novel, his first, ranges from financial scams in Hong Kong to nuclear physics in Ireland via Mongolian shamans. The startlingly imaginative tangents he takes should just about circumvent the wrath of anthropologists, physicists, and economists. And you can amass a small pile of other Mitchell titles (*number9dream*, *Cloud Atlas*, and the engaging *Black Swan Green*) to prop up the sun-lounger.

► **Ian McEwan, *Saturday***. A fantastic writer, McEwan here provides a brilliant portrait of a London neurosurgeon troubled by contemporary events in the world and traversing an exceptional day in his middle age. The novel is tense and deeply thought-inspiring. Fortunately, the author also has a long backlist of exceptionally good novels to choose from.

—CAROLINE ASH

► **Steven D. Levitt and Stephen J. Dubner, *Freakonomics: A Rogue Economist Explores the Hidden Side of Everything***. Economists have broadened their focus in recent decades, and now their interests seem unlimited. Fearlessly plunging into a stimulating array of diverse topics—from why drug dealers live with their mothers to how schoolteachers cheat—the authors come up with startling conclusions, and their methods may affect how you think about more subjects than you might have imagined.

► **V. Kasturi Rangan, John A. Quelch, Gustavo Herrero, and Brooke Barton, Eds., *Business Solutions for the Global Poor: Creating Social and Economic Value***. From reliance on international aid to a reverence for what East Asian countries have accomplished on their own, discussions of solutions for overcoming poverty have covered a wide range of topics. But surprisingly, even within the “free markets” paradigm, there has been little emphasis on what business can do for the four-billion-plus poor living on less than \$5 per day. This edited volume strives to fill that gap.

—DAVID BLOOM (HARVARD UNIVERSITY)

► **Jennet Conant, *Tuxedo Park: A Wall Street Tycoon and the Secret Palace of Science That Changed the Course of World War II***. This is a

great mix of history and gossip. Conant describes many fascinating figures, and she depicts a time when science was done in a very different way.

—JOHN BRAUMAN (STANFORD UNIVERSITY)

► **Jim Endersby, *A Guinea Pig's History of Biology: The Plants and Animals Who Taught Us the Facts of Life***. The conceit of this engaging book is to tell how biologists have come to understand heredity from the point of view of some of the plants and animals that have been its central subjects. From observations made in the stable and the greenhouse—of Arabian mares and passionflowers—Endersby in effect traces the development of a model organisms approach to biology in the modern laboratory, culminating in chapters on zebrafish and *Arabidopsis*. More truly a history of genetics than a history of biology, the book is illuminating and entertaining throughout.

► **Janet Browne, *Charles Darwin: Voyaging and Charles Darwin: The Power of Place***. What better way to prepare for the coming sesquicentennial of the publication of *On the Origin of Species* than by reading an award-winning biography of Darwin? Drawing on the wealth of documents in Darwin's correspondence and papers, Browne offers a sympathetic portrait and new insights into the complex man and his pathbreaking contributions. The first volume focuses on Darwin's expedition on the *Beagle*, depicting a scientist in formation; the second begins with his receipt of Alfred Russel Wallace's manuscript and analyzes the emergence of Darwin as a public evolutionist.

—ANGELA CREAGER (PRINCETON UNIVERSITY)

► **Robert Sawyer, *Frameshift***. This medical thriller includes genetic disorders, in vitro fertilization, health insurance, Neandertal genomics, Nazi war criminals, and a love story between researchers occurring in the near future at UC Berkeley. Perhaps not the author's best, but an exciting read that could be a movie with Adrien Brody and Sandra Bullock.

► **James Surowiecki, *The Wisdom of Crowds*; Malcolm Gladwell, *Blink***. For contrast and contradiction in popular science, try reading these two bestsellers back to back. Gladwell argues that your personal “expert” intuition is right most of the time (but not always).

Surowiecki discusses how a good group can be smarter than any individual, including experts. (But what allows a group to be wise?) Both of these interesting, but fast and light, books can start engaging conversations with your traveling companions.

—BRIAN H. DAVISON (OAK RIDGE NATIONAL LABORATORY)

► **Michael Pollan, *The Botany of Desire: A Plant's-Eye View of the World*.** We often read of how humans have selected desired features in certain plants, but here Pollan looks at how plants have changed us. He explores four examples—apples, tulips, marijuana, and potatoes—each of which raises a completely different set of interesting questions (e.g., is genetic engineering justified?) that can be discussed with scientists as well as nonscientists. I often recommend this book for biology classes for nonmajors because it is both an easy read and very informative.

—VICKI FUNK (SMITHSONIAN INSTITUTION)

► **Richard Dawkins, *The Ancestor's Tale: A Pilgrimage to the Dawn of Life*.** Dawkins provides a fascinating look at evolution and how our genome evolved. Starting with our closest relatives (Neandertals and nonhuman primates), he proceeds back through time along our phylogenetic tree to microbes. His enticing tales about each branch are organized in story-like chapters, so you can put the book down and easily pick it up again.

—ROGER GLASS (NATIONAL INSTITUTES OF HEALTH)

► **Rose Tremain, *The Colour*.** The color is gold, and Tremain has written a wonderful novel around the search for gold on the western shores of South Island New Zealand in the late 1800s. Farming gets forgotten once news of gold arrives, despite the hardships of crossing the Southern Alps and the grim reality of prospecting with thousands of others.

► **Amartya Sen, *Identity and Violence: The Illusion of Destiny*.** It is difficult not to respond just to the title, given present tensions and conflicts. In this profound and engagingly written book, Sen argues that conflict and violence are sustained by the illusion that we all have unique identities, that the world is divided between religions or civilizations. By looking at the other identities we all have, we can develop a better understanding of human freedom, and hence the basis for a more peaceful global society. There is a lightness of touch and much to admire in this analysis of race, identity and conflict. It deserves to be widely read.

—CHRIS HAWKESWORTH (UNIVERSITY OF BRISTOL)

► **Charles Darwin, *Voyage of the Beagle*.** Adventure travel writing at its best, with a steady mix of natural history observations and thoughtful musings. It really is as good of a read as everyone says it is.

► **Norman F. Cantor, *In the Wake of the Plague: The Black Death and the World It Made*.** A somewhat different view of how infectious disease rewrote the royal alliances and political landscape of

Europe. Cantor follows the story beyond the Black Death to include global climate change, anthrax, and genetic precursors for susceptibility to modern-day HIV.

—PAM HINES

► **Robert Sapolsky, *A Primate's Memoir: A Neuroscientist's Unconventional Life Among the Baboons*.** When Sapolsky was 21, he joined a troop of baboons in the Serengeti in order to study stress-related disease and behavior among them. His often-humorous account of his field studies paints an engaging and touching story of a very inexperienced student dropped into an environment extraordinarily different from his native New York. The moment-by-moment description of taking blood samples from baboons (“darting”) is riotously funny. He offers fascinating insights about the social interactions of nonhuman primates as well as his own interactions with Masai, officials, and other scientists.

► **China Miéville, *Perdido Street Station*.** This is a work of fantasy, but don't think of the genre you abandoned as a teenager. The author has created an intricate, richly textured—and sometimes horrifying—technologically arcane city, which we learn about by following his protagonist, a scientist. There are sculptures made from the secretions of an insect life-form, genetic and mechanical engineering of various kinds and states of independent life, and a predator that lives on the dreams of other creatures. Miéville has degrees in social anthropology and international relations. The book reflects his appreciation of the complexities of different groups living and working together.

—BARBARA JASNY

► **Charles Mann, *1491: New Revelations of the Americas Before Columbus*.** The popular image of the pre-Columbian Americas as pristine forests with native tribes living lightly on the land needs rethinking. In his survey of recent archaeological, anthropological, and paleoenvironmental research, Mann argues that in the centuries before Columbus's arrival large populations of humans inhabited the Americas and had a more profound impact on the land than we have realized. His engaging synthesis is well referenced and often convincing—and, unexpectedly, very hard to put down.

—KATRINA KELNER

► **Allegra Goodman, *Intuition*.** Goodman has created an engrossing and mostly plausible narrative about possible research misconduct in an intense laboratory setting. The characters are well etched, and her depiction of their evolving relationships as charges, defenses, and counter-charges flow is convincing. Readers of *Science* will recognize certain characters who are modeled closely enough on players in widely known cases to encourage identification—and partisanship may follow, as one's feelings about (say) Stewart and Feder, the Whitehead, or Big John Dingell come to the surface. Better to avoid that temptation and instead enjoy the inner workings of this good story.

—DONALD KENNEDY



► **Paul de Kruif, *Microbe Hunters*; Hans Zinsser, *Rats, Lice, and History*; Sinclair Lewis, *Arrowsmith*.** The first is an old classic but still a gripping detective story on the great early microbiologists. Fun reading even for the layman. The second, although longer, has the historical gravitas, so you see how the world is changed by research. It's also well written. Lewis's novel, very light reading, tells the story of the hero's choice between medicine and research as a career.

—DANIEL KOSHLAND (UNIVERSITY OF CALIFORNIA, BERKELEY)

► **Malcolm Gladwell, *Blink: The Power of Thinking Without Thinking*.** Gladwell argues for the advantages of going with first impressions. Although the book is found on the business shelf in airport bookstores, I was amazed that the stories and examples were from the sciences. It is a really good airplane read.

—SHIRLEY MALCOM (AAAS)

► **Mark Edwards and Lloyd Timberlake, *Hard Rain: Our Headlong Collision with Nature*.** As we move to address problems of climate change, deteriorating ecosystem services, and other environmental issues, we need a blend of clear thought and compelling motivation: head and heart. Edwards and Timberlake have made an exceptionally compelling contribution to the second category. They take the lyrics of Bob Dylan's prescient "A Hard Rain's A-Gonna Fall" and—phrase by phrase—attach appropriate photographs of exceptional power to each. The images have a visceral impact.

► **Lee Smolin, *The Trouble with Physics: The Rise of String Theory, the Fall of a Science, and What Comes Next*.** Smolin gives an admirably clear yet rigorous account of our quest to understand the fundamental forces of physics, from the early days of quantum mechanics, through the successes of quantum electrodynamics, to today's continuing search for a grand unified theory "of everything." Often misrepresented as simply a swingeing attack on the evangelistic string theory community—which it is—the book is much more than that. I particularly liked the concluding chapters discussing how a half-century of notable growth in the numbers of researchers has, in effect, greatly increased the ratio of people to problems, with consequent changes in the sociology of this community.

—ROBERT MAY (UNIVERSITY OF OXFORD)

► **Nancy Burnett and Brad Matsen, *The Shape of Life*.** The companion to an award-winning PBS series, this lavishly illustrated book does not sacrifice the content of the series while still conforming to the vagaries of my leisure time. The authors explore the body plans and lifestyles of eight phyla. They begin with the "animal Eve" (sponges) and end with the most advanced animals (the chordates), describing along the way how each form has been superbly matched to function. The book draws from marine biology, paleontology, evolutionary biology, ecology, genetics, and natural history

to tell interesting stories about a rogue's galley of animals that fascinate and amaze—and certainly enrich any beach sojourn.

—MARCIA K. MCNUTT (MONTEREY BAY AQUARIUM RESEARCH INSTITUTE)

► **William Boyd, *Brazzaville Beach*.** Primatologists have a reputation for discord, but in this novel set in central Africa, friction among scientists is just one of many levels of conflict. The researchers disagree—violently—over whether the chimp colonies they are studying are models of cooperation or riven by violence. The background is an interminable and bloody civil war. The protagonist, young researcher Hope Clearwater, is escaping from a marriage blighted by mental illness and infidelity. Boyd weaves these themes together in a story that is part discourse on the roots of conflict, part thriller, and wholly entertaining.

► **Kazuo Ishiguro, *Never Let Me Go*.** There's something odd about the exclusive school that Kathy and her friends attended in England. But as Kathy, now in her early thirties, tells their story, the reader slowly realizes what it is that sets these kids apart. Science fiction set in current times, the novel explores a morally repugnant use of science and the society that condones it. In his understated but beautiful prose, Ishiguro imbues this ultimately chilling tale with warmth and understanding.

—COLIN NORMAN

► **Randolph M. Nesse and George C. Williams, *Why We Get Sick: The New Science of Darwinian Medicine*.** This stimulating book should interest everyone. According to the authors, you gain as a patient if your doctor explains the evolutionary roots of your disease. That understanding takes the patient away from the reaction "Why me?" By looking at our evolutionary history and changes in modern lifestyles, we all may gain a better understanding of our condition, be it health or disease.

—HELGA NOWOTNY (EUROPEAN RESEARCH COUNCIL)

► **Bill Bryson, *A Short History of Nearly Everything*.** This rather remarkable book surveys scientific discoveries from the dawn of the universe to human evolution. Bryson is a nonscientist, and yet he shamed me when I found how little I knew about important topics outside my own field.

—JOHN PENDRY (IMPERIAL COLLEGE)

► **D. T. Max, *The Family That Couldn't Sleep: A Medical Mystery*.** Max interweaves histories of the desperate struggles of an Italian family with fatal familial insomnia and the rise of prion diseases—scrapie in English sheep and kuru in the Fore of Papua New Guinea. He presents a Nobelist as a self-confessed "pedagogic pedophilic pediatrician," the bitter jealousies and pettiness of cutting-edge research, and the tearing up of biological dogma. Max's detective story gradually reveals that, against all expectations, each



disease is caused by a nonliving infectious agent—protein.

—GUY RIDDIHOUGH

► **Kim Todd, *Chrysalis: Maria Sibylla Merian and the Secrets of Metamorphosis***. Todd tells the story of a 17th-century naturalist and scientific illustrator who studied plants and insects. At the age of 52, with her 20-year-old daughter, Merian journeyed to Surinam to investigate butterfly development. This biography offers fascinating reading about a little-known, independent woman.

—VERA RUBIN (CARNEGIE INSTITUTION OF WASHINGTON)

► **Jeffrey Russell, *Inventing the Flat Earth: Columbus and Modern Historians***. There is a widely believed notion that in the “dark ages” and before Columbus, people believed the Earth was flat, but Russell shows that this is a modernist myth about the past. His concise account includes much on map making, ancient Greek calculations of the Earth’s shape and circumference, and medieval geographic knowledge.

—RICHARD SHWEDER (UNIVERSITY OF CHICAGO)

► **Jonathan Lethem, *Motherless Brooklyn***. This novel about a detective with Tourette’s syndrome demonstrates the nature of this ultimate obsessive-compulsive disorder. Not only excellent literature, it provides a profound description of the realities of living with this disease. The detective has to touch the suspect on the shoulder six times before arresting him and goes to White Castle for lunch so he can eat six hamburgers. Bridging the distance between clinical and fiction, it is also written with humor.

—KARI STEFANSSON (DECODE GENETICS)

► **Peter Heather, *The Fall of the Roman Empire: A New History of Rome and the Barbarians***. This work offers a refreshing approach to explaining why the Roman Empire declined and fell in the fourth and fifth century CE. The many past attempts to explain these events have often been based on pure speculation or authors’ prejudices. Using an unsentimental and matter-of-fact approach combined with numerous fresh insights from archaeology and history, Heather comes up with novel and astonishing explanations.

—PETER STERN

► **Abraham Pais, “*Subtle Is the Lord*”: *The Science and the Life of Albert Einstein***. A richly rewarding if challenging overview of the highlights of Einstein’s science and years. Some familiarity with early physics courses is desirable.

► **James Gleick, *Genius: The Life and Science of Richard Feynman***. An accessible summary of Feynman’s wide-ranging technical accomplishments, which are often lost in his more popular and widely circulated collections.

► **Michael Riordan and Lillian Hoddeson, *Crystal Fire: The Invention of the Transistor and the Birth of the Information Age***. A great read. The dynamics between Bardeen and Brattain, the inventors, and Shockley, who was inspired by their accomplishments, show an all-too-human side of science. The book also offers a testimonial to Bell Telephone Laboratories in some of its finest years.

► **Harold McGee, *On Food and Cooking: The Science and Lore of the Kitchen***. Rather massive for beach reading, but a wonderful encyclopedia to sample. Every paragraph seems to have noteworthy, often unexpected bits about food and its transformations.

► **Jonathan Weiner, *The Beak of the Finch: A Story of Evolution in Our Time***. Two decades of research in the Galapagos during the late 20th century demonstrated how rapidly evolution can occur. An informal, meaty, and highly readable account of observing natural selection in “real time.”

—ED WASSERMAN (DUPONT)

► **Mary Roach, *Stiff: The Curious Lives of Human Cadavers***. By turns thought-provoking, slightly stomach-turning, and very, very funny, this book by *Salon* columnist Roach explores the many things done with corpses in the name of medicine, science, and pseudoscience—everything from the gross anatomy lab, to forensic and crash-test science, to medicinal cannibalism, to bizarre crucifixion experiments to “prove” the authenticity of the Shroud of Turin. The author’s irreverent and digressive style makes for a surprisingly entertaining trip.

—STEWART WILLS

► **Ben Okri, *The Famished Road***. This tells the story of an African spirit-child (abiku) who has chosen to remain in the world of the living in spite of its harshness, its injustice, and its unfulfilled longings. Interweaving fantasy and reality, Okri writes powerfully of ill-fated ordinary people and the ghosts who prey on them, of people caught between tribal traditions and the forces of urbanization, of experience with punishment that is often misapplied but never escaped for long. It is a novel of modern Africa told with a distinctive African voice—a must read for young scientists on their way to field stations in West Africa.

—STEVEN WOLINSKY (NORTHWESTERN UNIVERSITY)

► **Roy Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity***. This remarkable history of medicine from antiquity to the present includes how the Egyptians used hippopotamus in their cure for baldness and how lemons helped Nelson defeat Napoleon. Porter shows that the beliefs of early Christianity replaced many of those of Hippocratic medicine and discusses how modern medicine has become synonymous with complex networks of universities, hospitals, pharmaceutical companies, and governments. Science has not eliminated fantasies about health.

—LEWIS WOLPERT (UNIVERSITY COLLEGE, LONDON)

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