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“The history is fascinating, as are the insights into the personalities of these great thinkers.”—New Scientist Is there a number at the root of the universe? A primal number that everything in the world hinges on? This question exercised many great minds of the twentieth century, among them the groundbreaking physicist Wolfgang Pauli and the famous psychoanalyst Carl Jung. Their obsession with the power of certain numbers—including 137, which describes the atom’s fine-structure constant and has great Kabbalistic significance—led them to develop an unlikely friendship and to embark on a joint mystical quest reaching deep into medieval alchemy, dream interpretation, and the Chinese Book of Changes. 137 explores the profound intersection of modern science with the occult, but above all it is the tale of an extraordinary, fruitful friendship between two of the greatest thinkers of our times. Originally published in hardcover as Deciphering the Cosmic Number. No Marketing Blurb Researchers, historians, and philosophers of science have debated the nature of scientific research in education for more than 100 years.

Recent enthusiasm for "evidence-based" policy and practice in educationâ€"now codified in the federal law that authorizes the bulk of elementary and secondary education programsâ€"have brought a new sense of urgency to understanding the ways in which the basic tenets of science manifest in the study of teaching, learning, and schooling. Scientific Research in Education describes the similarities and differences between scientific inquiry in education and scientific inquiry in other fields and disciplines and provides a number of examples to illustrate these ideas. Its main argument is that all scientific endeavors share a common set of principles, and that each fieldâ€"including education researchâ€"develops a specialization that accounts for the particulars of what is being studied. The book also provides suggestions for how the federal government can best support high-quality scientific research in education. This book is a short history of self-propagating high-temperature synthesis (SHS) of inorganic materials and substances. The author considers distinct features of the research work of the most active groups along with their important scientific and practical achievements. The main result of these efforts is the appearance a new field of knowledge on the boundary between combustion science and materials science. The book is written in an original manner which combines the description of the scientific results with interesting stories about various episodes accompanying development of significant fields of science. The book should be of interest to for SHS specialists and representative students and researchers of allied sciences (physical and inorganic chemistry, macroscopic kinetics, materials science and technology of inorganic materials, metallurgy, etc.). Carbon in Earth's fluid envelopes - the atmosphere, biosphere, and hydrosphere, plays a fundamental role in our planet's climate system and a

central role in biology, the environment, and the economy of earth system. The source and original quantity of carbon in our planet is uncertain, as are the identities and relative importance of early chemical processes associated with planetary differentiation. Numerous lines of evidence point to the early and continuing exchange of substantial carbon between Earth's surface and its interior, including diamonds, carbon-rich mantle-derived magmas, carbonate rocks in subduction zones and springs carrying deeply sourced carbon-bearing gases. Thus, there is little doubt that a substantial amount of carbon resides in our planet's interior. Yet, while we know it must be present, carbon's forms, transformations and movements at conditions relevant to the interiors of Earth and other planets remain uncertain and untapped. Volume highlights include: - Reviews key, general topics, such as carbonate minerals, the deep carbon cycle, and carbon in magmas or fluids - Describes new results at the frontiers of the field with presenting results on carbon in minerals, melts, and fluids at extreme conditions of planetary interiors - Brings together emerging insights into carbon's forms, transformations and movements through study of the dynamics, structure, stability and reactivity of carbon-based natural materials - Reviews emerging new insights into the properties of allied substances that carry carbon, into the rates of chemical and physical transformations, and into the complex interactions between moving fluids, magmas, and rocks to the interiors of Earth and other planets - Spans the various chemical redox states of carbon, from reduced hydrocarbons to zero-valent diamond and graphite to oxidized CO2 and carbonates - Captures and synthesizes the exciting results of recent, focused efforts in an emerging scientific discipline - Reports advances over the last decade that have led to a major leap

forward in our understanding of carbon science - Compiles the range of methods that can be tapped tap from the deep carbon community, which includes experimentalists, first principles theorists, thermodynamic modelers and geodynamicists - Represents a reference point for future deep carbon science research Carbon in Planetary Interiors will be a valuable resource for researchers and students who study the Earth's interior. The topics of this volume are interdisciplinary, and therefore will be useful to professionals from a wide variety of fields in the Earth Sciences, such as mineral physics, petrology, geochemistry, experimentalists, first principles theorists, thermodynamics, material science, chemistry, geophysics and geodynamics. From Research to Manuscript, written in simple, straightforward language, explains how to understand and summarize a research project. It is a writing guide that goes beyond grammar and bibliographic formats, by demonstrating in detail how to compose the sections of a scientific paper. This book takes you from the data on your desk and leads you through the drafts and rewrites needed to build a thorough, clear science article. At each step, the book describes not only what to do but why and how. It discusses why each section of a science paper requires its particular form of information, and it shows how to put your data and your arguments into that form. Importantly, this writing manual recognizes that experiments in different disciplines need different presentations, and it is illustrated with examples from well-written papers on a wide variety of scientific subjects. As a textbook or as an individual tutorial, From Research to Manuscript belongs in the library of every serious science writer and editor. This book covers all essential aspects of writing scientific research articles, presenting eighteen carefully selected titles that

offer essential, “must-know” content on how to write high-quality articles. The book also addresses other, rarely discussed areas of scientific writing including dealing with rejected manuscripts, the reviewer’s perspective as to what they expect in a scientific article, plagiarism, copyright issues, and ethical standards in publishing scientific papers. Simplicity is the book’s hallmark, and it aims to provide an accessible, comprehensive and essential resource for those seeking guidance on how to publish their research work. The importance of publishing research work cannot be overemphasized. However, a major limitation in publishing work in a scientific journal is the lack of information on or experience with scientific writing and publishing. Young faculty and trainees who are starting their research career are in need of a comprehensive guide that provides all essential components of scientific writing and aids them in getting their research work published. Originally published in German in 1935, this monograph anticipated solutions to problems of scientific progress, the truth of scientific fact and the role of error in science now associated with the work of Thomas Kuhn and others. Arguing that every scientific concept and theory—including his own—is culturally conditioned, Fleck was appreciably ahead of his time. And as Kuhn observes in his foreword, "Though much has occurred since its publication, it remains a brilliant and largely unexploited resource." "To many scientists just as to many historians and philosophers of science facts are things that simply are the case: they are discovered through properly passive observation of natural reality. To such views Fleck replies that facts are invented, not discovered. Moreover, the appearance of scientific facts as discovered things is itself a social construction, a made thing. A work of transparent brilliance, one of the most significant contributions

toward a thoroughly sociological account of scientific knowledge."—Steven Shapin, Science "There is no doubt that this book will be well received by those who are fortunate enough to come across it. This book will be of use to the growing number of people involved either as purchasers or providers of research. Don't go to work without it!" --Health Services Management Research Journal "I would recommend [this book] to a colleague as a useful companion text for students. I would say that this is an engaging discussion of experimental research for social, behavioral, and health science students. The writing style is fresh and entertaining, and draws the willing reader into thinking through the process of designing and conducting experimental research. It is not a 'cookbook' or a compendium of facts. Rather, it is a pragmatic and thoughtful description intended to help students understand how to design meaningful experiments, and by understanding that, they will also understand how to interpret research they do not conduct themselves." --Katharyn A. May, School of Nursing, Vanderbilt University "This slim but packed volume is written for prospective researchers in the social and health sciences. The writing style is lively, encouraging, upbeat. R. Barker Bausell brings science down to earth without sacrificing respect for rigor and complexity. . . . Recommended for all institutions with undergraduate or graduate research requirements in the social and health sciences." --Choice Tired of research methods books that tell how to perform a research study without any mention of the why behind doing research? Aimed at communicating the excitement and responsibility of the research process, this remarkable volume enables you to evaluate beforehand whether a prospective research study has the potential to either improve the human condition, contribute to theory

formation, or explain the etiology of a significant phenomenon rather than to produce just another "publishable" study. By emphasizing how to think about and strategize a research study, R. Barker Bausell shows you the important steps of a scientific study--from the formulation of the problem to the write-up of the results. Replete with illustrative examples drawn from the social, health, and behavioral sciences, this volume is a must for all serious researchers. The scientific research enterprise is built on a foundation of trust. Scientists trust that the results reported by others are valid. Society trusts that the results of research reflect an honest attempt by scientists to describe the world accurately and without bias. But this trust will endure only if the scientific community devotes itself to exemplifying and transmitting the values associated with ethical scientific conduct. On Being a Scientist was designed to supplement the informal lessons in ethics provided by research supervisors and mentors. The book describes the ethical foundations of scientific practices and some of the personal and professional issues that researchers encounter in their work. It applies to all forms of research-whether in academic, industrial, or governmental settings-and to all scientific disciplines. This third edition of On Being a Scientist reflects developments since the publication of the original edition in 1989 and a second edition in 1995. A continuing feature of this edition is the inclusion of a number of hypothetical scenarios offering guidance in thinking about and discussing these scenarios. On Being a Scientist is aimed primarily at graduate students and beginning researchers, but its lessons apply to all scientists at all stages of their scientific careers. This book covers all essential aspects of writing scientific research articles, presenting eighteen carefully selected titles that offer essential, “must-know” content on how to write high-

quality articles. The book also addresses other, rarely discussed areas of scientific writing including dealing with rejected manuscripts, the reviewer's perspective as to what they expect in a scientific article, plagiarism, copyright issues, and ethical standards in publishing scientific papers. Simplicity is the book's hallmark, and it aims to provide an accessible, comprehensive and essential resource for those seeking guidance on how to publish their research work. The importance of publishing research work cannot be overemphasized. However, a major limitation in publishing work in a scientific journal is the lack of information on or experience with scientific writing and publishing. Young faculty and trainees who are starting their research career are in need of a comprehensive guide that provides all essential components of scientific writing and aids them in getting their research work published. "This newly updated version of the classic guide to writing and publishing scientific papers provides the tools needed to succeed in the communication aspects of a scientific career"--Provided by publisher. Balloons & marginal instructions; Writing a scientific paper; Preparation of the typescript and figures; Speaking at scientific meetings; Addressed to those for whom english is a foreign language; An appeal to north americans; Preparation of a dissertation or thesis; Biblliography; Index. During recent decades, our vision of the world of physics - from the subatomic world to the cosmos - has undergone a profound evolution. In this book, one of the scientists who contributed to this development narrates the story of his life and his work. Being, or wanting to become, a scientist requires academic training in the science subjects. To succeed as a research scientist and educator requires specific as well as general skills. Skills for a Scientific Life provides insight into how to be successful. This career book is

intended for potential entrants, early career and mid-career scientists for a wide range of science disciplines. Features Offers advice on specific skills for research article writing, grant writing, and refereeing as well as teaching undergraduates and supervising postgraduates Provides helpful case studies resulting from the author's teaching and mentoring experience Contributes a special emphasis on skills for realizing wider impacts such as sustainability and gender equality Presents several chapters on leadership skills both in academe and in government service Concludes with an emphasis on the author’s overall underpinning of the topics from the point of view of ethics Love, God & Neurons is a hair-raising tale of a naive college dropout from Bengal becoming one of twenty-first century's most influential minds in Neuroscience. Called "a self-trained scientist and thinker" (Michael Persinger) and "a prolific, imaginative neuroscientist" (Ronald Cicurel), Abhijit Naskar cheerfully looks back on years of philosophical, spiritual and scientific adventures, while closely analyzing them with the Science of the Mind. In his surreal and captivating manner of writing, he gives us a glimpse of the internal molecular storms that used to give him countless sleepless nights and how those nights led to some of the brightest days in the history of scientific investigation. In Love, God & Neurons Naskar offers a candid look at the events, emotions and people that steered his life through the mesmerizing alleys of philosophy and some mystical and romantic experiences that ultimately inspired him to utilize the modern tools of science in the pursuit of lavishing human life with colors and self-awareness. Science and technology are embedded in virtually every aspect of modern life. As a result, people face an increasing need to integrate information from science with

their personal values and other considerations as they make important life decisions about medical care, the safety of foods, what to do about climate change, and many other issues. Communicating science effectively, however, is a complex task and an acquired skill. Moreover, the approaches to communicating science that will be most effective for specific audiences and circumstances are not obvious. Fortunately, there is an expanding science base from diverse disciplines that can support science communicators in making these determinations. Communicating Science Effectively offers a research agenda for science communicators and researchers seeking to apply this research and fill gaps in knowledge about how to communicate effectively about science, focusing in particular on issues that are contentious in the public sphere. To inform this research agenda, this publication identifies important influences â€" psychological, economic, political, social, cultural, and media-related â€" on how science related to such issues is understood, perceived, and used. The book describes why we undertake science and discovery in various forms, and it explores the limits of discovery faced jointly by scientists and society in general. The author offers case studies and illustrates how researchers collaborate to tackle science challenges of a larger scope as well as educate future science students. Why the prejudice against adopting a scientific attitude in the social sciences is creating a new 'Dark Ages' and preventing us from solving the perennial problems of crime, war, and poverty. During the Dark Ages, the progress of Western civilization virtually stopped. The knowledge gained by the scholars of the classical age was lost; for nearly 600 years, life was governed by superstitions and fears fueled by ignorance. In this outspoken and forthright book, Lee McIntyre argues that today we are in a new Dark Age—that we

are as ignorant of the causes of human behavior as people centuries ago were of the causes of such natural phenomena as disease, famine, and eclipses. We are no further along in our understanding of what causes war, crime, and poverty—and how to end them—than our ancestors. We need, McIntyre says, another scientific revolution; we need the courage to apply a more rigorous methodology to human behavior, to go where the empirical evidence leads us—even if it threatens our cherished religious or political beliefs about human autonomy, race, class, and gender. Resistance to knowledge has always arisen against scientific advance. Today's academics—economists, psychologists, philosophers, and others in the social sciences—stand in the way of a science of human behavior just as clerics attempted to block the Copernican revolution in the 1600s. A scientific approach to social science would test hypotheses against the evidence rather than find and use evidence only to affirm a particular theory, as is often the practice in today's social sciences. Drawing lessons from Galileo's conflict with the Catholic church and current debates over the teaching of "creation science," McIntyre argues that what we need most to establish a science of human behavior is the scientific attitude—the willingness to hear what the evidence tells us even if it clashes with religious or political pieties—and the resolve to apply our findings to the creation of a better society. One of the pathways by which the scientific community confirms the validity of a new scientific discovery is by repeating the research that produced it. When a scientific effort fails to independently confirm the computations or results of a previous study, some fear that it may be a symptom of a lack of rigor in science, while others argue that such an observed inconsistency can be an important precursor to new discovery. Concerns about reproducibility and replicability

have been expressed in both scientific and popular media. As these concerns came to light, Congress requested that the National Academies of Sciences, Engineering, and Medicine conduct a study to assess the extent of issues related to reproducibility and replicability and to offer recommendations for improving rigor and transparency in scientific research. Reproducibility and Replicability in Science defines reproducibility and replicability and examines the factors that may lead to non-reproducibility and non-replicability in research. Unlike the typical expectation of reproducibility between two computations, expectations about replicability are more nuanced, and in some cases a lack of replicability can aid the process of scientific discovery. This report provides recommendations to researchers, academic institutions, journals, and funders on steps they can take to improve reproducibility and replicability in science. Humans, especially children, are naturally curious. Yet, people often balk at the thought of learning scienceâ€"the "eyes glazed over" syndrome. Teachers may find teaching science a major challenge in an era when science ranges from the hardly imaginable quark to the distant, blazing quasar. Inquiry and the National Science Education Standards is the book that educators have been waiting forâ€"a practical guide to teaching inquiry and teaching through inquiry, as recommended by the National Science Education Standards. This will be an important resource for educators who must help school boards, parents, and teachers understand "why we can't teach the way we used to." "Inquiry" refers to the diverse ways in which scientists study the natural world and in which students grasp science knowledge and the methods by which that knowledge is produced. This book explains and illustrates how inquiry helps students learn science content, master how to do

science, and understand the nature of science. This book explores the dimensions of teaching and learning science as inquiry for K-12 students across a range of science topics. Detailed examples help clarify when teachers should use the inquiry-based approach and how much structure, guidance, and coaching they should provide. The book dispels myths that may have discouraged educators from the inquiry-based approach and illuminates the subtle interplay between concepts, processes, and science as it is experienced in the classroom. Inquiry and the National Science Education Standards shows how to bring the standards to life, with features such as classroom vignettes exploring different kinds of inquiries for elementary, middle, and high school and Frequently Asked Questions for teachers, responding to common concerns such as obtaining teaching supplies. Turning to assessment, the committee discusses why assessment is important, looks at existing schemes and formats, and addresses how to involve students in assessing their own learning achievements. In addition, this book discusses administrative assistance, communication with parents, appropriate teacher evaluation, and other avenues to promoting and supporting this new teaching paradigm. Robert Kanigel takes us into the heady world of a remarkable group of scientists working at the National Institutes of Health and the Johns Hopkins University: a dynasty of American researchers who for over forty years have made Nobel Prize- and Lasker Award-winning breakthroughs in biomedical science. Exceptionally useful guide to pragmatic scientific method: design of experiments and apparatus, analysis of data, sampling and measurement, numerical computation, much more. Broad applications. References. Illustrations. As staff writer for Scientific American, John Horgan has a window on contemporary science unsurpassed in all the

world. Who else routinely interviews the likes of Lynn Margulis, Roger Penrose, Francis Crick, Richard Dawkins, Freeman Dyson, Murray Gell-Mann, Stephen Jay Gould, Stephen Hawking, Thomas Kuhn, Chris Langton, Karl Popper, Stephen Weinberg, and E.O. Wilson, with the freedom to probe their innermost thoughts? In The End Of Science, Horgan displays his genius for getting these larger-than-life figures to be simply human, and scientists, he writes, "are rarely so human . . . so at there mercy of their fears and desires, as when they are confronting the limits of knowledge."This is the secret fear that Horgan pursues throughout this remarkable book: Have the big questions all been answered? Has all the knowledge worth pursuing become known? Will there be a final "theory of everything" that signals the end? Is the age of great discoverers behind us? Is science today reduced to mere puzzle solving and adding detains to existing theories? Horgan extracts surprisingly candid answers to there and other delicate questions as he discusses God, Star Trek, superstrings, quarks, plectics, consciousness, Neural Darwinism, Marx's view of progress, Kuhn's view of revolutions, cellular automata, robots, and the Omega Point, with Fred Hoyle, Noam Chomsky, John Wheeler, Clifford Geertz, and dozens of other eminent scholars. The resulting narrative will both infuriate and delight as it mindless Horgan's smart, contrarian argument for "endism" with a witty, thoughtful, even profound overview of the entire scientific enterprise. Scientists have always set themselves apart from other scholars in the belief that they do not construct the truth, they discover it. Their work is not interpretation but simple revelation of what exists in the empirical universe. But science itself keeps imposing limits on its own power. Special relativity prohibits the transmission of matter or

information as speeds faster than that of light; quantum mechanics dictates uncertainty; and chaos theory confirms the impossibility of complete prediction. Meanwhile, the very idea of scientific rationality is under fire from Neo-Luddites, animal-rights activists, religious fundamentalists, and New Agers alike. As Horgan makes clear, perhaps the greatest threat to science may come from losing its special place in the hierarchy of disciplines, being reduced to something more akin to literaty criticism as more and more theoreticians engage in the theory twiddling he calls "ironic science." Still, while Horgan offers his critique, grounded in the thinking of the world's leading researchers, he offers homage too. If science is ending, he maintains, it is only because it has done its work so well. For the past forty years, doctors at the University of Virginia Medical Center have conducted research into young children's reports of past-life memories. Dr. Ian Stevenson, the founder of this work, has always written for a scientific audience. Now, in this provocative and fascinating book, Dr. Jim B. Tucker, a child psychiatrist who currently directs the research, shares these studies with the general public. Life Before Life is a landmark work—one that has the potential to challenge and ultimately change our understandings about life and death. Children who report past-life memories typically begin talking spontaneously about a previous life when they are two to three years old. Some talk about the life of a deceased family member, while others describe the life of a stranger. They may recount details about previous family members, events in the previous life, or the way they died in that life. The children tend to show a strong emotional involvement with the apparent memories and often cry to be taken to the previous family. In many cases, parents have taken their children to the places they named, where they found that an individual had

died whose life matched the details given by the child. During the visits, some children have recognized family members or friends from that individual's life. Many children have had birthmarks that matched wounds on the body of the deceased individual. Researchers have studied more than 2500 such cases, and their careful investigations have produced an impressive body of work. JAMA, the Journal of the American Medical Association, stated in a review of one of Dr. Stevenson's scientific books that, "in regard to reincarnation he has painstakingly and unemotionally collected a detailed series of cases . . . in which the evidence is difficult to explain on any other grounds." Life Before Life explores the various features of this world-wide phenomenon, describing numerous cases along the way. We meet a boy in Michigan who, after being born with three birthmarks that matched wounds on his deceased brother, begins talking about events from the brother's life; a boy in Turkey who gives a number of accurate details, including the name, of a man who lived 500 miles away and died fifty years before the boy was born; and a girl in Sri Lanka who is able to recognize the family members of a deceased stranger as they are presented to her one by one, giving specifics about their lives that she could not have known from their appearance. Dr. Tucker presents this material in a straightforward way, relating extraordinary stories that have been amassed with a scientific approach. He then considers how best to interpret the evidence, and he lets readers reach their own conclusions—which, for many, will be profound. The scientific method is used to solve many great mysteries in natural science. It is long process that includes systematic observation, measurement and experiment. It is then followed by formulation, testing and modification of hypotheses. At fourth grade, your child will

begin to use the scientific method in laboratory classes. This book will become very useful in this stage. Grab a copy today! An account that analyzes the dynamic reasoning processes implicated in a fundamental problem of creativity in science: how does genuine novelty emerge from existing representations? How do novel scientific concepts arise? In Creating Scientific Concepts, Nancy Nersessian seeks to answer this central but virtually unasked question in the problem of conceptual change. She argues that the popular image of novel concepts and profound insight bursting forth in a blinding flash of inspiration is mistaken. Instead, novel concepts are shown to arise out of the interplay of three factors: an attempt to solve specific problems; the use of conceptual, analytical, and material resources provided by the cognitive-social-cultural context of the problem; and dynamic processes of reasoning that extend ordinary cognition. Focusing on the third factor, Nersessian draws on cognitive science research and historical accounts of scientific practices to show how scientific and ordinary cognition lie on a continuum, and how problem-solving practices in one illuminate practices in the other. Her investigations of scientific practices show conceptual change as deriving from the use of analogies, imagistic representations, and thought experiments, integrated with experimental investigations and mathematical analyses. She presents a view of constructed models as hybrid objects, serving as intermediaries between targets and analogical sources in bootstrapping processes. Extending these results, she argues that these complex cognitive operations and structures are not mere aids to discovery, but that together they constitute a powerful form of reasoning—model-based reasoning—that generates novelty. This new approach to mental modeling and analogy, together with Nersessian's

cognitive-historical approach, make Creating Scientific Concepts equally valuable to cognitive science and philosophy of science. In the vein of Goodnight Moon, say "goodnight" to your lab in this picture book parody of a beloved classic. Perfect for scientists of all ages! It's been a long day at the lab for this scientist. Now it's time to say goodnight! Goodnight laser Goodnight notebook Goodnight picture of Einstein with a stern look While poking fun at the clutter and chaos of lab life, scientists of all ages will appreciate ending their day with this sweet parody. They'll be rested and ready to return to the world of research in the morning! This scientific parody book in the style of Goodnight Moon is a delight for little lab girls and guys. Goodnight Lab is written by Chris Ferrie, author of Quantum Physics for Babies and other books in the Baby University series. Parents and kids both will love the accurate descriptions of all the quirks of grownup laboratories. Readers who love the Lab Girl book or Nerdy Babies will adore this humorous and educational book for kids. This book is the perfect solution if you're looking for science baby gifts and physics gifts for curious kids. This book completes a scientific life trilogy of books following on from the Hows (i.e. skills) and the Whys is now the Whats of a scientific life. Starting with just what is science, then on to what is physics, what is chemistry and what is biology the book discusses career situations in terms of types of obstacles faced. There follow examples of what science has achieved as well as plans and opportunities. The contexts for science are dependencies of science on mathematics, how science cuts across disciplines, and the importance of engineering and computer software. What science is as a process is that it is distinctly successful in avoiding or dealing with failures. Most recently a radical change in what is science is the merger of the International Council of Scientific Unions and the

International Social Sciences Council. Key Features: Dissects what is science and its contexts Provides wide ranging case studies of science and discovery based directly on the author’s many decades in science The author has outstanding experience in mentoring and career development, and also in outreach activities for the public and students of all ages The world of science today involves a merger of ‘the sciences’ and the ‘social sciences’ Tireless, controversial, and hugely inspirational to those who knew her or encountered her work, Lynn Margulis was a scientist whose intellectual energy and interests knew no bounds. Best known for her work on the origins of eukaryotic cells, the Gaia hypothesis, and symbiogenesis as a driving force in evolution, her work has forever changed the way we understand life on Earth. When Margulis passed away in 2011, she left behind a groundbreaking scientific legacy that spanned decades. In this collection, Dorion Sagan, Margulis's son and longtime collaborator, gathers together the voices of friends and colleagues to remark on her life and legacy, in essays that cover her early collaboration with James Lovelock, her fearless face-off with Richard Dawkins during the so-called "Battle of Balliol" at Oxford, the intrepid application of her scientific mind to the insistence that 9/11 was a false-flag operation, her affinity for Emily Dickinson, and more. Margulis was elected to the National Academy of Sciences in 1983, received the prestigious National Medal of Science in 1999, and her papers are permanently archived at the Library of Congress. Less than a month before her untimely death, Margulis was named one of the twenty most influential scientists alive - one of only two women on this list, which include such scientists as Stephen Hawking, James Watson, and Jane Goodall. Since the first edition of On Being a Scientist was published

in 1989, more than 200,000 copies have been distributed to graduate and undergraduate science students. Now this well-received booklet has been updated to incorporate the important developments in science ethics of the past 6 years and includes updated examples and material from the landmark volume Responsible Science (National Academy Press, 1992). The revision reflects feedback from readers of the original version. In response to graduate students' requests, it offers several case studies in science ethics that pose provocative and realistic scenarios of ethical dilemmas and issues. On Being a Scientist presents penetrating discussions of the social and historical context of science, the allocation of credit for discovery, the scientist's role in society, the issues revolving around publication, and many other aspects of scientific work. The booklet explores the inevitable conflicts that arise when the black and white areas of science meet the gray areas of human values and biases. Written in a conversational style, this booklet will be of great interest to students entering scientific research, their instructors and mentors, and anyone interested in the role of scientific discovery in society. Explains 175 of the most important laws, principles, equations, and theories that form the foundation of the field as we know it. This book shows how science works, fails to work, or pretends to work, by looking at examples from such diverse fields as physics, biomedicine, psychology, and economics. Social science affects our lives every day through the predictions of experts and the rules and regulations they devise. Sciences like economics, sociology and health are subject to more ‘operating limitations’ than classical fields like physics or chemistry or biology. Yet, their methods and results must also be judged according to the same scientific standards. Every literate citizen should understand these standards and be able to tell the

difference between good science and bad. Scientific Method enables readers to develop a critical, informed view of scientific practice by discussing concrete examples of how real scientists have approached the problems of their fields. It is ideal for students and professionals trying to make sense of the role of science in society, and of the meaning, value, and limitations of scientific methodology in the social sciences. A prismatic examination of the evolution of medicine, from a trade to a science, through the exemplary lives of ten men and women. Johns Hopkins University, one of the preeminent medical schools in the nation today, has played a unique role in the history of medicine. When it first opened its doors in 1893, medicine was a rough-and-ready trade. It would soon evolve into a rigorous science. It was nothing short of a revolution. This transition might seem inevitable from our vantage point today. In recent years, medical science has mapped the human genome, deployed robotic tools to perform delicate surgeries, and developed effective vaccines against a host of deadly pathogens. But this transformation could not have happened without the game-changing vision, talent, and dedication of a small cadre of individuals who were willing to commit body and soul to the advancement of medical science, education, and treatment. A Scientific Revolution recounts the stories of John Shaw Billings, Max Brödel, Mary Elizabeth Garrett, William Halsted, Jesse Lazear, Dorothy Reed Mendenhall, William Osler, Helen Taussig, Vivien Thomas, and William Welch. This chorus of lives tells a compelling tale not just of their individual struggles, but how personal and societal issues went hand-in-hand with the advancement of medicine. "This is a new edition of The Scientists Guide to Writing, published in 2016. As a reminder the book provided practical advice on writing, covering topics including how to generate and maintain

writing momentum, tips on structuring a scientific paper, revising a first draft, handling citations, responding to peer reviews, and managing coauthorships, among other topics. For the 2nd edtition, Heard has made several changes, specifically: - expanding the chapter on writing in English for non-native speakers - adding two chapters: one on efficient and effective reading and one on selecting the right journal and how to use preprint sites. - doubled the number of exercises - various other add-ons to existing chapters, including information on reporting statistical results, handling disagreement among peer reviewers, and managing co-authorships"-- Openness and sharing of information are fundamental to the progress of science and to the effective functioning of the research enterprise. The advent of scientific journals in the 17th century helped power the Scientific Revolution by allowing researchers to communicate across time and space, using the technologies of that era to generate reliable knowledge more quickly and efficiently. Harnessing today's stunning, ongoing advances in information technologies, the global research enterprise and its stakeholders are moving toward a new open science ecosystem. Open science aims to ensure the free availability and usability of scholarly publications, the data that result from scholarly research, and the methodologies, including code or algorithms, that were used to generate those data. Open Science by Design is aimed at overcoming barriers and moving toward open science as the default approach across the research enterprise. This report explores specific examples of open science and discusses a range of challenges, focusing on stakeholder perspectives. It is meant to provide guidance to the research enterprise and its stakeholders as they build strategies for achieving open science and take the next steps. New York Times Bestseller For those who could

read between the lines, the censored news out of China was terrifying. But the president insisted there was nothing to worry about. Fortunately, we are still a nation of skeptics. Fortunately, there are those among us who study pandemics and are willing to look unflinchingly at worst-case scenarios. Michael Lewis's taut and brilliant nonfiction thriller pits a band of medical visionaries against the wall of ignorance that was the official response of the Trump administration to the outbreak of COVID-19. The characters you will meet in these pages are as fascinating as they are unexpected. A thirteen-year-old girl's science project on transmission of an airborne pathogen develops into a very grown-up model of disease control. A local public-health officer uses her worm's-eye view to see what the CDC misses, and reveals great truths about American society. A secret team of dissenting doctors, nicknamed the Wolverines, has everything necessary to fight the pandemic: brilliant backgrounds, world-class labs, prior experience with the pandemic scares of bird flu and swine flu…everything, that is, except official permission to implement their work. Michael Lewis is not shy about calling these people heroes for their refusal to follow directives that they know to be based on misinformation and bad science. Even the internet, as crucial as it is to their exchange of ideas, poses a risk to them. They never know for sure who else might be listening in.