Modern Prometheus Editing The Human Genome With C

This book is the second collection of over 50 articles and essays authored by Sidney Perkowitz. Appearing in diverse outlets such as Discover, Washington Post, Aeon, Los Angeles Review of Books, Nautilus, Museum of the Moving Image, and Physics World, they represent the best of his writing about science and technology, and their links to culture and society, the arts and the media, and the humanities. Written for general readers, the pieces explore the outer and inner universes from cosmic space to the

human mind, from the artistic use of science to the impact of technology and AI in the justice system, in medicine, and in dealing with COVID-19.

The definitive insider's history of the genetic revolution--significantly updated to reflect the discoveries of the last decade. James D. Watson, the Nobel laureate whose pioneering work helped unlock the mystery of DNA's structure, charts the greatest scientific journey of our time, from the discovery of the double helix to today's controversies to what the future may hold. Updated to include new findings in gene editing, epigenetics, agricultural chemistry, as well as two entirely new chapters on personal genomics and cancer research. This is the most

comprehensive and authoritative exploration of DNA's impact--practical, social, and ethical--on our society and our world.

Since the original publication of Playing God? in 1996, three developments in genetic technology have moved to the center of the public conversation about the ethics of human bioengineering. Cloning, the completion of the human genome project, and, most recently, the controversy over stem cell research have all sparked lively debates among religious thinkers and the makers of public policy. In this updated edition, Ted Peters illuminates the key issues in these debates and continues to make deft connections between our questions about God and

our efforts to manage technological innovations with wisdom.

A complete guide to endonuclease-based genomic engineering, from basic science to application in disease biology and clinical treatment.

CRISPR People

The Fragile Brain

Annotated for Scientists, Engineers, and Creators of All Kinds

Urban Evolutionary Biology

Steering Human Evolution

Modifying Biological Life in the Twenty-First Century

Summer/Fall 2017, Volume 18

This book critiques the connection between

Western society and madness, scrutinizing if and how societal insanity affects the cause, construction, and consequence of madness. Looking beyond the affected individual to their social, political, economic, ecological, and cultural context, this book examines whether society itself, and its institutions, divisions, practices, and values, is mad. That society's insanity is relevant to the sanity and insanity of its citizens has been argued by Fromm in The Sane Society, but also by a host of sociologists, social thinkers, epidemiologists and biologists. This book builds on classic texts such as Foucault's History of

Madness, Scull's Marxist-oriented works and more recent publications which have arisen from a range of socio-political and patient-orientated movements. Chapters in this book draw on biology, psychology, sociological and anthropological thinking that argues that where madness is concerned, society matters. Providing an extended case study of how the sociological imagination should operate in a contemporary setting, this book draws on genetics, neuroscience, cognitive science, radical psychology, and evolutionary psychology/psychiatry. It is an important read for

students and scholars of sociology, anthropology, social policy, criminology, health, and mental health.

This is the only authoritative text of this late novel. It reproduces the manuscript which Mark Twain wrote last, and the only one he finished or called the "The Mysterious Stranger." Albert Bigelow Paine's edition of the same name has been shown to be a textual fraud.

This book develops a new theoretical account of the historical role of the novel in fashioning our bodies and environments.

If our bodies could do more things, would our

lives be better? Genome editing is a rapidly developing technology that can modify human genes. It can cure heritable diseases, but we could even make certain genetic "improvements" to healthy people. Should we change human embryos genetically to achieve such goals? Bringing together a leading molecular biologist and a Christian ethicist this book responds to the need for solid information and helpful orientation for a pressing moral issue. They explain relevant technical issues without the jargon, clarify the most important philosophical and religious arguments and bring empirical insights to the

question of what helps us lead meaningful lives.
Hacking the Code of Life
The Universe from Different Angles
American Prometheus
Theology, Science and "Playing God"
Fostering Innovation for Agriculture 4.0
Insane Society: A Sociology of Mental Health
Cut-And-Paste Genetics

Artificial Life After Frankenstein brings the insights born of Mary Shelley's legacy to bear upon the ethics and politics of making artificial life and intelligence in the twenty-first century. What are the obligations of humanity to the artificial creatures we

make? And what are the corresponding rights of those creatures, whether they are learning machines or genetically modified organisms? In seeking ways to respond to these questions, so vital for our age of genetic engineering and artificial intelligence, we would do well to turn to the capacious mind and imaginative genius of Mary Wollstonecraft Shelley (1797-1851). Shelley's novels Frankenstein; or, The Modern Prometheus (1818) and The Last Man (1826) precipitated a modern political strain of science fiction concerned with the ethical dilemmas that arise when we make artificial life—and make life artificial—through science, technology, and other

forms of cultural change. In Artificial Life After Frankenstein, Eileen Hunt Botting puts Shelley and several classics of modern political science fiction into dialogue with contemporary political science and philosophy, in order to challenge some of the apocalyptic fears at the fore of twenty-first-century political thought on AI and genetic engineering. Focusing on the prevailing myths that artificial forms of life will end the world, destroy nature, and extinguish love, Botting shows how Shelley modeled ways to break down and transform the meanings of apocalypse, nature, and love in the face of widespread and deep-seated fear about the power of

technology and artifice to undermine the possibility of humanity, community, and life itself. Through their explorations of these themes, Mary Shelley and authors of modern political science fiction from H. G. Wells to Nnedi Okorafor have paved the way for a techno-political philosophy of living with the artifice of humanity in all of its complexity. In Artificial Life After Frankenstein, Botting brings the insights born of Shelley's legacy to bear upon the ethics and politics of making artificial life and intelligence in the twenty-first century.

The development of CRISPR-Cas technology is revolutionizing biology. Based on machinery

bacteria use to target foreign nucleic acids, these powerful techniques allow investigators to edit nucleic acids and modulate gene expression more rapidly and accurately than ever before. Featuring contributions from leading figures in the CRISPR-Cas field, this laboratory manual presents a state-of-the-art guide to the technology. It includes step-by-step protocols for applying CRISPR-Cas-based techniques in various systems, including yeast, zebrafish, Drosophila, mice, and cultured cells (e.g., human pluripotent stem cells). The contributors cover web-based tools and approaches for designing guide RNAs that precisely target genes of

interest, methods for preparing and delivering CRISPR-Cas reagents into cells, and ways to screen for cells that harbor the desired genetic changes. Strategies for optimizing CRISPR-Cas in each system--especially for minimizing off-target effects--are also provided. Authors also describe other applications of the CRISPR-Cas system, including its use for regulating genome activation and repression, and discuss the development of next-generation CRISPR-Cas tools. The book is thus an essential laboratory resource for all cell, molecular, and developmental biologists, as well as biochemists, geneticists, and all who seek to expand

their biotechnology toolkits.

The original 1818 text of Mary Shelley's classic novel, with annotations and essays highlighting its scientific, ethical, and cautionary aspects. Mary Shelley's Frankenstein has endured in the popular imagination for two hundred years. Begun as a ghost story by an intellectually and socially precocious eighteen-year-old author during a cold and rainy summer on the shores of Lake Geneva, the dramatic tale of Victor Frankenstein and his stitched-together creature can be read as the ultimate parable of scientific hubris. Victor, "the modern Prometheus," tried to do what he perhaps should have left to

Nature: create life. Although the novel is most often discussed in literary-historical terms—as a seminal example of romanticism or as a groundbreaking early work of science fiction—Mary Shelley was keenly aware of contemporary scientific developments and incorporated them into her story. In our era of synthetic biology, artificial intelligence, robotics, and climate engineering, this edition of Frankenstein will resonate forcefully for readers with a background or interest in science and engineering, and anyone intrigued by the fundamental questions of creativity and responsibility. This edition of Frankenstein pairs the original 1818 version of the

manuscript—meticulously line-edited and amended by Charles E. Robinson, one of the world's preeminent authorities on the text—with annotations and essays by leading scholars exploring the social and ethical aspects of scientific creativity raised by this remarkable story. The result is a unique and accessible edition of one of the most thought-provoking and influential novels ever written. Essays by Elizabeth Bear, Cory Doctorow, Heather E. Douglas, Josephine Johnston, Kate MacCord, Jane Maienschein, Anne K. Mellor, Alfred Nordmann

The bestselling author of Leonardo da Vinci and Steve Jobs returns with a gripping account of how

Nobel Prize winner Jennifer Doudna and her colleagues launched a revolution that will allow us to cure diseases, fend off viruses, and have healthier babies. When Jennifer Doudna was in sixth grade, she came home one day to find that her dad had left a paperback titled The Double Helix on her bed. She put it aside, thinking it was one of those detective tales she loved. When she read it on a rainy Saturday, she discovered she was right, in a way. As she sped through the pages, she became enthralled by the intense drama behind the competition to discover the code of life. Even though her high school counselor told her girls didn't become

scientists, she decided she would. Driven by a passion to understand how nature works and to turn discoveries into inventions, she would help to make what the book's author, James Watson, told her was the most important biological advance since his co-discovery of the structure of DNA. She and her collaborators turned ?a curiosity ?of nature into an invention that will transform the human race: an easy-to-use tool that can edit DNA. Known as CRISPR, it opened a brave new world of medical miracles and moral questions. The development of CRISPR and the race to create vaccines for coronavirus will hasten our transition to the next

great innovation revolution. The past half-century has been a digital age, based on the microchip, computer, and internet. Now we are entering a life-science revolution. Children who study digital coding will be joined by those who study genetic code. Should we use our new evolution-hacking powers to make us less susceptible to viruses? What a wonderful boon that would be! And what about preventing depression? Hmmm…Should we allow parents, if they can afford it, to enhance the height or muscles or IQ of their kids? After helping to discover CRISPR, Doudna became a leader in wrestling with these moral issues and, with her

collaborator Emmanuelle Charpentier, won the Nobel Prize in 2020. Her story is a thrilling detective tale that involves the most profound wonders of nature, from the origins of life to the future of our species.
The Prosthetic Imagination
How Humanity Discovered Its Own Extinction
Neo-Leadership, Image and Influence
A History of the Novel as Artificial Life
Mary Shelley and the Rights of the Child
Georgetown Journal of International Affairs
Cut-and-Paste Genetics

Neurodegenerative diseases, such as a stroke, Alzheimer's and dementia, are now tragically

commonplace within the western world. Our brains are a strange and complex organ, and there is much to be discovered about what causes them to fail in such devastating ways. In this book Kathleen Taylor presents the ever-developing research into the cause and cure of these life-changing conditions, focusing on insights arising from the relatively new field of neuroimmunology - the increasing recognition of the important role of the immune system in the brain. Interweaving the latest scientific ideas on neurodegenerative diseases with accounts of the devastation which illnesses affecting the

brain can cause to sufferers and to anyone who cares about them, The Fragile Brain is not only an important account of current research in this field, but a very personal study. As instances of dementia rise in our ageing populations, many harbour anxieties concerning the future.This book is about knowing the enemy.

In Mary Shelley and the Rights of the Child, Eileen Hunt Botting contends that Frankenstein is a profound work of speculative fiction designed to engage a radical moral and political question: do children have rights?

This book is a critical examination of the philosophical and moral issues in relation to human enhancement and the various related medical developments that are now rapidly moving from the laboratory into the clinical realm. In the book, the author critically examines technologies such as genetic engineering, neural implants, pharmacologic enhancement, and cryonic suspension from transhumanist and bioconservative positions, focusing primarily on moral issues and what it means to be a human in a setting where technological interventions sometimes impact strongly on our humanity. The author also

introduces the notion that death is a process rather than an event, as well as identifies philosophical and clinical limitations in the contemporary determination of brain death as a precursor to organ procurement for transplantation. The discussion on what exactly it means to be dead is later applied to explore philosophical and clinical issues germane to the cryonics movement. Written by a physician/ scientist and heavily referenced to the peer-reviewed medical and scientific literature, the book is aimed at advanced students and academics but should be readable by any intelligent reader willing to carry

out some side-reading. No prior knowledge of moral philosophy is assumed, as the various key approaches to moral philosophy are outlined early in the book.

Humanity must steer its evolution. As human knowledge moves a step ahead of Darwin's theories, this book presents the emergence of human-made meta-evolution shaping our alternative futures. This novel process poses fateful challenges to humanity, which require regulation of emerging science and technology which may endanger the future of our species. However, to do so successfully, a novel 'humanity-craft' has to be developed; main

ideologies and institutions need redesign; national sovereignty has to be limited; a decisive global regime becomes essential; some revaluation of widely accepted norms becomes essential; and a novel type of political leader, based on merit in addition to public support, is urgently needed. Taking into account the strength of nationalism and vested interests, it may well be that only catastrophes will teach humanity to metamorphose into a novel epoch without too high transition costs. But initial steps, such as United Nation reforms, are urgent in order to contain calamities and may soon

become feasible. Being both interdisciplinary and based on personal experience of the author, this book adds up to a novel paradigm on steering human evolution. It will be of great interest to scholars and researchers of modern history, evolution sciences, future studies, political science, philosophy of action, and science and technology. It will also be of wide appeal to the general reader anxious about the future of life on Earth. Comments on the Corona pandemic add to the book's concrete significance.

Climate Change and the Future of Democracy

How gene editing will rewrite our futures

No. 44, The Mysterious Stranger
The Code Breaker
Jennifer Doudna, Gene Editing, and the Future of the Human Race
The New Power to Control Evolution
Eighteen Theses on Homo Sapiens Metamorphosis

What does the birth of babies whose embryos had gone through genome editing mean--for science and for all of us? In November 2018, the world was shocked to learn that two babies had been born in China with DNA edited while they were embryos--as dramatic a development in genetics as the cloning of Dolly the sheep was in 1996. In this book, Hank Greely, a leading authority on law and genetics, tells the fascinating story of this human experiment and its

consequences. Greely explains what Chinese scientist He Jiankui did, how he did it, and how the public and other scientists learned about and reacted to this unprecedented genetic intervention.

WINNER OF THE PULITZER PRIZE FOR NONFICTION • "The definitive biography" (Newsweek) of J. Robert Oppenheimer, one of the iconic figures of the twentieth century, a brilliant physicist who led the effort to build the atomic bomb for his country in a time of war, and who later found himself confronting the moral consequences of scientific progress. In this magisterial, acclaimed biography twenty-five years in the making, Kai Bird and Martin Sherwin capture Oppenheimer's life and times, from his early career to his central role in the Cold War. This is biography and

history at its finest, riveting and deeply informative. "A masterful account of Oppenheimer's rise and fall, set in the context of the turbulent decades of America's own transformation. It is a tour de force." —Los Angeles Times Book Review

Citizen Science Fiction argues that science-fiction literature and media can engage and empower individuals to become active and critical participants in citizen science such that they can collaborate meaningfully in the scientific and technological communities, institutions, and industries that deeply shape their everyday lives.

The scientific and technical development of any kind of germplasm is regulated by a vast network of treaties, conventions, international agreements, and national and

regional legislation. These regulations govern biotechnological innovations in plants and microorganisms, access to and use of plant genetic resources, and biosafety. This complex mix has made it difficult to arrive at global interpretations, due to overlaps, gaps, ambiguities, contradictions, and lack of consistency. The big picture is even more complex, as a series of scientific developments – gene editing in particular – have in some cases rendered these international regulatory frameworks obsolete. This book puts forward an innovative approach: a "Comprehensive Plant Germplasm System". The System is a cooperative game theory-based proposal for a binding international convention which would supersede all other conventions, treaties, national and regional legislation covering native

varieties and traditional developments, heterogeneous plant varieties, microorganisms, biotechnological inventions, plant genetic resources, and biosafety regulation. In short, it offers a comprehensive framework regarding intellectual property, biosafety, and business regulation and covers all types of germplasm. If applied, the system is expected to yield higher productivity rates in crops and improved food biodiversity, as well as a new paradigm based on the promotion of innovation for "Agriculture 4.0."

Science Between Myth and History

CRISPR-Cas

A Crack in Creation

Political Philosophy in "Frankenstein"

A Comprehensive Plant Germplasm System

Editing the Human Genome with Crispr-Cas9
X-Risk

The Georgetown Journal of International Affairs is the official publication of the Edmund A. Walsh School of Foreign Service at Georgetown University. Founded to serve as an academic resource for scholars, business leaders, policymakers, and students of international relations alike, the journal cultivates a dialogue accessible to those with varying levels of knowledge about foreign affairs and international politics.

This book comprehensively describes the impact of modern technologies on political leadership by

providing a new paradigm of the phenomenon of neo-leadership, that is political leadership oriented on creating both the image and political influence on the Internet. It examines its functioning in the new media environment and identifies the most important transforming trends, taking into account their impact on political and social relations in an era of dynamic technological development. Systematically exploring various dimensions of leadership, it presents new notions relevant in a networked world where leaders are created and conduct themselves against the backdrop of a technological revolution, including the development of AI, automation, algorithms and

ultrafast networks, all of which strengthen or disrupt their impact and create a new set of virtual authorities exerting an increasing impact on society, ethical considerations and political life and requiring new methods for study. This book will be of key interest to scholars, students and practitioners of leadership and elite studies, media and communication studies, political marketing, political science, international relations; public policy, and sociology.

How humanity came to contemplate its possible extinction. From forecasts of disastrous climate change to prophecies of evil AI superintelligences

and the impending perils of genome editing, our species is increasingly concerned with the prospects of its own extinction. With humanity's future on this planet seeming more insecure by the day, in the twenty-first century, existential risk has become the object of a growing field of serious scientific inquiry. But, as Thomas Moynihan shows in X-Risk, this preoccupation is not exclusive to the post-atomic age of global warming and synthetic biology. Our growing concern with human extinction itself has a history. Tracing this untold story, Moynihan revisits the pioneers who first contemplated the possibility of human extinction

and stages the historical drama of this momentous discovery. He shows how, far from being a secular reprise of religious prophecies of apocalypse, existential risk is a thoroughly modern idea, made possible by the burgeoning sciences and philosophical tumult of the Enlightenment era. In recollecting how we first came to care for our extinction, Moynihan reveals how today's attempts to measure and mitigate existential threats are the continuation of a project initiated over two centuries ago, which concerns the very vocation of the human as a rational, responsible, and future-oriented being. Breakthroughs in genetics present us with a promise

and a predicament. The promise is that we will soon be able to treat and prevent a host of debilitating diseases. The predicament is that our newfound genetic knowledge may enable us to manipulate our nature—to enhance our genetic traits and those of our children. Although most people find at least some forms of genetic engineering disquieting, it is not easy to articulate why. What is wrong with re-engineering our nature? The Case against Perfection explores these and other moral quandaries connected with the quest to perfect ourselves and our children. Michael Sandel argues that the pursuit of perfection is flawed for reasons that go beyond

safety and fairness. The drive to enhance human nature through genetic technologies is objectionable because it represents a bid for mastery and dominion that fails to appreciate the gifted character of human powers and achievements. Carrying us beyond familiar terms of political discourse, this book contends that the genetic revolution will change the way philosophers discuss ethics and will force spiritual questions back onto the political agenda. In order to grapple with the ethics of enhancement, we need to confront questions largely lost from view in the modern world. Since these questions verge on theology, modern philosophers

and political theorists tend to shrink from them. But our new powers of biotechnology make these questions unavoidable. Addressing them is the task of this book, by one of America's preeminent moral and political thinkers.

Artificial Life After Frankenstein

Genome Editing and Engineering

Modifying Our Genes

The Story of the Genetic Revolution

Science Sketches

What Does it Mean to be Human? Life, Death, Personhood and the Transhumanist Movement

DNA

'[A]n excellent, brisk guide to what is likely to happen as opposed to the fantastically remote.' – Los Angeles Review of Books In 2018 the world woke up to gene editing with a storm of controversy over twin girls born in China with genetic changes deliberately introduced by scientists – changes they will pass on to their own offspring. Genetic modification (GM) has been with us for 45 years now, but the new system known as CRISPR or gene editing can

manipulate the genes of almost any organism with a degree of precision, ease and speed that we could only dream of ten years ago. But is it ethical to change the genetic material of organisms in a way that might be passed on to future generations? If a person is suffering from a lethal genetic disease, is it unethical to deny them this option? Who controls the application of this technology, when it makes 'biohacking' – perhaps of one's

own genome – a real possibility? Nessa Carey's book is a thrilling and timely snapshot of a cutting-edge technology that will radically alter our futures and the way we prevent disease. 'A focused snapshot of a brave new world.' – Nature 'A brisk, accessible primer on the fast-moving field, a clear-eyed look at a technology that is already driving major scientific advances – and raising complex ethical questions.' – Emily Anthes, Undark

This book will survey past and present efforts to democratize international institutions, and will advance the argument that a new degree of transparency and accountability on a global scale is necessary to address the threat of climate change. The volume will analyse how global governance could become more democratic and consequently more responsive to the challenge of climate change. As economic globalization has accelerated

since 1945, international institutions have done a remarkable job in facilitating global communication and commerce but have been far less effective in protecting the global commons.

More than three decades after its first publication, Edward Said's groundbreaking critique of the West's historical, cultural, and political perceptions of the East has become a modern classic. In this wide-ranging,

intellectually vigorous study, Said traces the origins of "orientalism" to the centuries-long period during which Europe dominated the Middle and Near East and, from its position of power, defined "the orient" simply as "other than" the occident. This entrenched view continues to dominate western ideas and, because it does not allow the East to represent itself, prevents true understanding. Essential, and still eye-opening, Orientalism remains

one of the most important books written about our divided world.

Science Between Myth and History explores scientific storytelling and its implications on the teaching, practice, and public perception of science. In communicating their science, scientists tend to use historical narratives for important rhetorical purposes. This text explores the implications of doing this.

Modern Prometheus

The Case against Perfection
The Quest for Common Ground and Its Importance for Scientific Practice
Orientalism
Understanding Genes
A CRISPR Revolution
Juvenescence

'The most important advance of our era. One of the pioneers of the field describes the exciting hunt for the key breakthrough and what it portends for our future' Walter Isaacson World-famous scientist Jennifer Doudna - winner of the 2020 Nobel Prize in

Chemistry for creating the revolutionary gene-editing technique CRISPR - explains her discovery, describes its power to reshape the future of all life and warns of its use. A handful of discoveries have changed the course of human history. This book is about the most recent and potentially the most powerful and dangerous of them all. It is an invention that allows us to rewrite the genetic code that shapes and controls all living beings. As a result, dreams of genetic manipulation have become a stark reality: the power to cure disease and alleviate suffering, as well as to re-design any

species, including humans, for our own ends. Jennifer Doudna is the co-inventor of this technology - known as CRISPR - and a scientist of worldwide renown. Writing with fellow researcher Samuel Sternberg, here she provides the definitive account of her discovery, explaining how this wondrous invention works and what it is capable of. She also asks us to consider what our new-found power means: how do we enjoy its unprecedented benefits while avoiding its equally unprecedented dangers? _____ PRAISE FOR A CRACK IN CREATION: 'The future is in our hands as

never before, and this book explains the stakes like no other' George Lucas 'One of the most PIONEERING women in science . . . Exhilarating' Arianna Huffington 'Thrilling' Adam Rutherford 'An instant classic' Siddhartha Mukherjee

Bringing together historical and ethical insights on the revolutionary, Nobel prize winning CRISPR/Cas9 gene editing technology, this accessible book examines the history of human attempts to understand and control our evolution, how the CRISPR/Cas9 technology works and what it could mean for the elimination of genetic diseases.

The specter of early twentieth-century eugenics—with its goal of preventing the "unfit" from reproducing through forced sterilization—still haunts us in this era of genetic engineering. Conrad B. Quintyn, an associate professor of biological anthropology at Bloomsburg University, Bloomsburg, Pennsylvania, calls this the new eugenics era because geneticists have begun to explore ways to prevent and repair defective genes in all humans. In this book, he considers whether genetic engineering will exacerbate social injustices and/or lead to a public safety issue. For instance, in 2012,

virologists in the U.S. and the Netherlands genetically engineered avian (bird) flu to be more transmissible between mammals. These scientists argued that virus transmission between mammals enables us to make vaccines to prevent pandemics. They never considered what would happen if the virus accidentally escaped the laboratory. Meanwhile, some scientists are experimenting with "designer babies," altering genes to remove diseases and even programming certain traits. Join the author as he considers whether scientists are playing God as well as the risks we face by altering genetics in The New Eugenics.

A handful of discoveries have changed the course of human history. This book is about the most recent and potentially the most powerful and dangerous of them all. It is an invention that allows us to rewrite the genetic code that shapes and controls all living beings with astonishing accuracy and ease. Thanks to it, the dreams of genetic manipulation have become a stark reality: the power to cure disease and alleviate suffering, to create new sources of food and energy, as well as to re-design any species, including humans, for our own ends. Jennifer Doudna is the co-inventor of this technology

- known as CRISPR - and a scientist of worldwide renown. Writing with fellow researcher Samuel Sternberg, here she provides the definitive account of her discovery, explaining how this wondrous invention works and what it is capable of. She also asks us to consider what our new-found power means: how do we enjoy its unprecedented benefits while avoiding its equally unprecedented dangers? The future of humankind - and of all life on Earth - is at stake. This book is an essential guide to the path that now lies ahead.

The Strange, Hopeful Science of Dementia

The Science and Ethics of Editing Humans
Religion and the New Technologies
Citizen Science Fiction
Genetic Determinism and Human Freedon
Thinking about Biology
From TALENs, ZFNs and CRISPRs to Molecular Surgery

This book is a printed edition of the Special Issue "Religion and the New Technologies" that was published in Religions

Thinking about Biology is intended for biology students who are interested in

reflecting on the wider contexts of their studies. This 2003 book encourages students to see that biology does not deliver certainties; it discusses how biological ideas become established facts; it uses history to examine how ideas change, and to show that the biological facts that form the basis of a biology course are likely to change too. Each chapter is based on biological topics, and examines them for their philosophical, social and political implications. Topics covered include the role of natural

selection in evolution, the history of ideas about fertilisation and inheritance, vivisection, and reductionism. Genetically modified foods, xenotransplantation, eugenics, and genetic testing are some of the controversial subjects discussed. Thinking About Biology should be essential reading for all college students already taking a biology course, and for those contemplating such a course in the future. An accessible but rigorous introduction to genes for non-experts, explaining what genes are and what they can and cannot do.

This book tells the dramatic story of Crispr and the potential impact of this gene-editing technology.

The New Eugenics

The Future of Political Leadership in the Digital Age

The Triumph and Tragedy of J. Robert Oppenheimer

Investing in the age of longevity

Playing God?

Frankenstein

Urban Evolutionary Biology fills an important knowledge gap on wild organismal evolution in the urban environment, whilst

offering a novel exploration of the fast-growing new field of evolutionary research. The growing rate of urbanization and the maturation of urban study systems worldwide means interest in the urban environment as an agent of evolutionary change is rapidly increasing. We are presently witnessing the emergence of a new field of research in evolutionary biology. Despite its rapid global expansion, the urban environment has until now been a largely neglected study site among evolutionary biologists. With its conspicuously altered ecological dynamics, it stands in stark contrast to the natural environments traditionally used as cornerstones for evolutionary ecology research. Urbanization can offer a great range of new opportunities to test for rapid evolutionary processes as a consequence of human activity, both because of

replicate contexts for hypothesis testing, but also because cities are characterized by an array of easily quantifiable environmental axes of variation and thus testable agents of selection. Thanks to a wide possible breadth of inference (in terms of taxa) that may be studied, and a great variety of analytical methods, urban evolution has the potential to stand at a fascinating multi-disciplinary crossroad, enriching the field of evolutionary biology with emergent yet incredibly potent new research themes where the urban habitat is key. Urban Evolutionary Biology is an advanced textbook suitable for graduate level students as well as professional researchers studying the genetics, evolutionary biology, and ecology of urban environments. It is also highly relevant to urban ecologists and urban wildlife practitioners.