

The Vaccine Race How Scientists Used Human Cells To Combat Killer Viruses

Chosen as a Book of the Year 2021 by the Financial Times, Sunday Times, Daily Mail, Prospect, Guardian and The Times. 'Vaxxers is so good that the book will be read for long after the pandemic is over' Financial Times 'One of the most epic and pioneering moments in human history' Sir Jeremy Farrar _____ The bestselling inside story of a historic moment for science and for humanity. On 1 January 2020, Professor Sarah Gilbert read an article about four people in China with an illness of unknown cause. Within two weeks, she and her team had designed a new vaccine that would go on to save millions of lives from Covid-19. Capturing a landmark moment, Sarah Gilbert and Catherine Green reveal their story of making the pioneering Oxford AstraZeneca vaccine and fighting a pandemic as ordinary people in extraordinary circumstances. They separate fact from fiction, they explain how they made their highly effective vaccine in record time with the eyes of the world watching, and they give us hope for the future. A Best Book of 2021 by Bloomberg BusinessWeek, Time, and The Washington Post The bestselling author of Leonardo da Vinci and Steve Jobs returns with a “compelling” (The Washington Post) account of how Nobel Prize winner Jennifer Doudna and her colleagues

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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 codiscovery 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

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preventing depression? Hmm... 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 an “enthraling detective story” (Oprah Daily) that involves the most profound wonders of nature, from the origins of life to the future of our species.

The Vaccine Race Science, Politics, and the Human Costs of Defeating Disease Penguin

'An enthralling tale of toil, tenacity and triumph'

RACHEL CLARKE This is the story of a race - not against other vaccines or other scientists, but against a deadly and devastating virus. On 1 January 2020, Sarah Gilbert, Professor of Vaccinology at Oxford University, read an article about four people in China with a strange pneumonia. Within two weeks, she and her team had designed a vaccine against a pathogen that no one had ever seen before. Less than 12 months later, vaccination was rolled out across the world to save millions of lives from Covid-19. In *Vaxxers*, we hear directly from Professor Gilbert and her colleague Dr Catherine Green as they reveal the inside story of making the Oxford AstraZeneca vaccine and the cutting-edge science and sheer hard work behind it. This is their story of fighting a pandemic as ordinary people in extraordinary circumstances. Sarah and Cath share the heart-stopping moments in the eye of the storm; they separate fact from

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fiction; they explain how they made a highly effective vaccine in record time with the eyes of the world watching; and they give us hope for the future. Vaxxers invites us into the lab to find out how science will save us from this pandemic, and how we can prepare for the inevitable next one.

The Fantastic Laboratory of Dr. Weigl: How Two Brave Scientists Battled Typhus and Sabotaged the Nazis
The Genetic Lottery

The Inside Story of the Oxford AstraZeneca Vaccine and the Race Against the Virus

The Vaccine

Stuck

Vaccine Epidemic

Vaxxers

Geoff Manaugh and Nicola Twilley have been researching quarantine since long before the COVID-19 pandemic. With *Until Proven Safe*, they bring us a book as compelling as it is definitive, not only urgent reading for social-distanced times but also an up-to-the-minute investigation of the interplay of forces---biological, political, technological--that shape our modern world.

Quarantine is our most powerful response to uncertainty: it means waiting to see if something hidden inside us will be revealed. It is also one of our most dangerous, operating through an assumption of guilt. In quarantine, we are considered infectious until proven safe. Until

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Proven Safe tracks the history and future of quarantine around the globe, chasing the story of emergency isolation through time and space—from the crumbling lazarettos of the Mediterranean, built to contain the Black Death, to an experimental Ebola unit in London, and from the hallways of the CDC to closed-door simulations where pharmaceutical execs and epidemiologists prepare for the outbreak of a novel coronavirus. But the story of quarantine ranges far beyond the history of medical isolation. In *Until Proven Safe*, the authors tour a nuclear-waste isolation facility beneath the New Mexican desert, see plants stricken with a disease that threatens the world's wheat supply, and meet NASA's Planetary Protection Officer, tasked with saving Earth from extraterrestrial infections. They also introduce us to the corporate tech giants hoping to revolutionize quarantine through surveillance and algorithmic prediction. We live in a disorienting historical moment that can feel both unprecedented and inevitable; *Until Proven Safe* helps us make sense of our new reality through a thrillingly reported, thought-provoking exploration of the meaning of freedom, governance, and mutual responsibility.

In response to the coronavirus disease 2019 (COVID-19) pandemic and the societal disruption it has brought, national governments and the

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international community have invested billions of dollars and immense amounts of human resources to develop a safe and effective vaccine in an unprecedented time frame. Vaccination against this novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), offers the possibility of significantly reducing severe morbidity and mortality and transmission when deployed alongside other public health strategies and improved therapies. Health equity is intertwined with the impact of COVID-19 and there are certain populations that are at increased risk of severe illness or death from COVID-19. In the United States and worldwide, the pandemic is having a disproportionate impact on people who are already disadvantaged by virtue of their race and ethnicity, age, health status, residence, occupation, socioeconomic condition, or other contributing factors. Framework for Equitable Allocation of COVID-19 Vaccine offers an overarching framework for vaccine allocation to assist policy makers in the domestic and global health communities. Built on widely accepted foundational principles and recognizing the distinctive characteristics of COVID-19, this report's recommendations address the commitments needed to implement equitable allocation policies for COVID-19 vaccine.

A provocative and timely case for how the science

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of genetics can help create a more just and equal society In recent years, scientists like Kathryn Paige Harden have shown that DNA makes us different, in our personalities and in our health—and in ways that matter for educational and economic success in our current society. In *The Genetic Lottery*, Harden introduces readers to the latest genetic science, dismantling dangerous ideas about racial superiority and challenging us to grapple with what equality really means in a world where people are born different. Weaving together personal stories with scientific evidence, Harden shows why our refusal to recognize the power of DNA perpetuates the myth of meritocracy, and argues that we must acknowledge the role of genetic luck if we are ever to create a fair society. Reclaiming genetic science from the legacy of eugenics, this groundbreaking book offers a bold new vision of society where everyone thrives, regardless of how one fares in the genetic lottery.

A London researcher was the first to assert that the combination measles-mumps-rubella vaccine known as MMR caused autism in children. Following this "discovery," a handful of parents declared that a mercury-containing preservative in several vaccines was responsible for the disease. If mercury caused autism, they reasoned, eliminating it from a child's system should treat the disorder.

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Consequently, a number of untested alternative therapies arose, and, most tragically, in one such treatment, a doctor injected a five-year-old autistic boy with a chemical in an effort to cleanse him of mercury, which stopped his heart instead.

Children with autism have been placed on stringent diets, subjected to high-temperature saunas, bathed in magnetic clay, asked to swallow digestive enzymes and activated charcoal, and injected with various combinations of vitamins, minerals, and acids. Instead of helping, these therapies can hurt those who are most vulnerable, and particularly in the case of autism, they undermine childhood vaccination programs that have saved millions of lives. An overwhelming body of scientific evidence clearly shows that childhood vaccines are safe and does not cause autism. Yet widespread fear of vaccines on the part of parents persists. In this book, Paul A. Offit, a national expert on vaccines, challenges the modern-day false prophets who have so egregiously misled the public and exposes the opportunism of the lawyers, journalists, celebrities, and politicians who support them. Offit recounts the history of autism research and the exploitation of this tragic condition by advocates and zealots. He considers the manipulation of science in the popular media and the courtroom, and he explores why society is susceptible to the

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bad science and risky therapies put forward by many antivaccination activists.

Viruses, Plagues, and History

The Code Breaker

The Immortal Life of Henrietta Lacks

National Strategy for the COVID-19 Response and Pandemic Preparedness

You Bet Your Life

Seven Stories of Science Gone Wrong

The Story of the Deadliest Pandemic in History

A New York Times Best Seller A National Book Critics Circle Award Finalist A New York Times Book Review Top 10 Book of the Year A Facebook "Year of Books" Selection One of the Best Books of the Year * National Book Critics Circle Award finalist * The New York Times Book Review (Top 10) *

Entertainment Weekly (Top 10) * New York Magazine (Top 10)* Chicago Tribune (Top 10) * Publishers Weekly (Top 10) * Time Out New York (Top 10) * Los Angeles Times * Kirkus * Booklist * NPR's Science Friday * Newsday * Slate * Refinery 29 * And many more... Why do we fear vaccines? A

provocative examination by Eula Biss, the author of Notes from No Man's Land, winner of the National Book Critics Circle Award Upon becoming a new mother, Eula Biss addresses a chronic condition of fear-fear of the government, the medical establishment, and what is in your child's air, food, mattress, medicine, and vaccines. She finds that you cannot immunize your child, or yourself, from the world. In this bold, fascinating book, Biss investigates the metaphors and myths surrounding our conception of immunity and its implications for the individual and the social body. As she hears more and more fears about vaccines, Biss researches what they mean for her own child, her immediate community,

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America, and the world, both historically and in the present moment. She extends a conversation with other mothers to meditations on Voltaire's *Candide*, Bram Stoker's *Dracula*, Rachel Carson's *Silent Spring*, Susan Sontag's *AIDS and Its Metaphors*, and beyond. *On Immunity* is a moving account of how we are all interconnected—our bodies and our fates.

The so-called vaccine court is a small special court in the United States Court of Federal Claims that handles controversial claims that a vaccine has harmed someone.

While vaccines in general are extremely safe and effective, some people still suffer severe vaccine reactions and bring their claims to vaccine court. In this court, lawyers, activists, judges, doctors, and scientists come together, sometimes arguing bitterly, trying to figure out whether a vaccine really caused a person's medical problem. In *Vaccine Court*, Anna Kirkland draws on the trials of the vaccine court to explore how legal institutions resolve complex scientific questions.

What are vaccine injuries, and how do we come to recognize them? What does it mean to transform these questions into a legal problem and funnel them through a special national vaccine court, as we do in the U.S.? What does justice require for vaccine injury claims, and how can we deliver it? These are highly contested questions, and the terms in which they have been debated over the last forty years are highly revealing of deeper fissures in our society over motherhood, community, health, harm, and trust in authority. While many scholars argue that it's foolish to let judges and lawyers decide medical claims about vaccines, Kirkland argues that our political and legal response to vaccine injury claims shows how well legal institutions can handle specialized scientific matters. *Vaccine Court* is an accessible and thorough account of what the vaccine court is, why we have it, and what it does.

#1 NEW YORK TIMES BESTSELLER • “The story of

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modern medicine and bioethics—and, indeed, race relations—is refracted beautifully, and movingly.”—Entertainment Weekly

NOW A MAJOR MOTION PICTURE FROM HBO®
STARRING OPRAH WINFREY AND ROSE BYRNE • ONE OF THE “MOST INFLUENTIAL” (CNN), “DEFINING” (LITHUB), AND “BEST” (THE PHILADELPHIA INQUIRER) BOOKS OF THE DECADE • ONE OF ESSENCE’S 50 MOST IMPACTFUL BLACK BOOKS OF THE PAST 50 YEARS • WINNER OF THE CHICAGO TRIBUNE HEARTLAND PRIZE FOR NONFICTION NAMED ONE OF THE BEST BOOKS OF THE YEAR BY The New York Times Book Review • Entertainment Weekly • O: The Oprah Magazine • NPR • Financial Times • New York • Independent (U.K.) • Times (U.K.) • Publishers Weekly • Library Journal • Kirkus Reviews • Booklist • Globe and Mail

Her name was Henrietta Lacks, but scientists know her as HeLa. She was a poor Southern tobacco farmer who worked the same land as her slave ancestors, yet her cells—taken without her knowledge—became one of the most important tools in medicine: The first “immortal” human cells grown in culture, which are still alive today, though she has been dead for more than sixty years. HeLa cells were vital for developing the polio vaccine; uncovered secrets of cancer, viruses, and the atom bomb’s effects; helped lead to important advances like in vitro fertilization, cloning, and gene mapping; and have been bought and sold by the billions. Yet Henrietta Lacks remains virtually unknown, buried in an unmarked grave. Henrietta’s family did not learn of her “immortality” until more than twenty years after her death, when scientists investigating HeLa began using her husband and children in research without informed consent. And though the cells had launched a multimillion-dollar industry that sells human biological materials, her family never saw any of the profits.

As Rebecca Skloot so brilliantly shows, the story of the Lacks

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family—past and present—is inextricably connected to the dark history of experimentation on African Americans, the birth of bioethics, and the legal battles over whether we control the stuff we are made of. Over the decade it took to uncover this story, Rebecca became enmeshed in the lives of the Lacks family—especially Henrietta’s daughter Deborah. Deborah was consumed with questions: Had scientists cloned her mother? Had they killed her to harvest her cells? And if her mother was so important to medicine, why couldn’t her children afford health insurance? Intimate in feeling, astonishing in scope, and impossible to put down, *The Immortal Life of Henrietta Lacks* captures the beauty and drama of scientific discovery, as well as its human consequences.

"A timely, fair-minded and crisply written account."—New York Times Book Review *Vaccine* juxtaposes the stories of brilliant scientists with the industry's struggle to produce safe, effective, and profitable vaccines. It focuses on the role of military and medical authority in the introduction of vaccines and looks at why some parents have resisted this authority. Political and social intrigue have often accompanied vaccination—from the divisive introduction of smallpox inoculation in colonial Boston to the 9,000 lawsuits recently filed by parents convinced that vaccines caused their children's autism. With narrative grace and investigative journalism, Arthur Allen reveals a history illuminated by hope and shrouded by controversy, and he sheds new light on changing notions of health, risk, and the common good. *How Vaccine Rumors Start -- and Why They Don't Go Away* Anti-vaxxers

Science, Politics, and the Human Costs of Defeating Disease
The Law and Politics of Injury
Spillover: Animal Infections and the Next Human Pandemic
How to Challenge a Misinformed Movement

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Longshot

'Thrilling, inspiring and informative page-turner.' Walter Isaacson, author of *The Code Breaker* You know what went wrong. This is the untold story of what went right. Few were ready when a mysterious respiratory illness emerged in Wuhan, China, in January 2020. Politicians, government officials, business leaders and public-health professionals were unprepared for the most devastating pandemic in a century. Many of the world's biggest drug and vaccine makers were slow to react or couldn't muster an effective response. It was up to a small group of unlikely and untested scientists and executives to save civilization. A French businessman dismissed by many as a fabulist. A Turkish immigrant with little virus experience. A quirky Midwesterner obsessed with insect cells. A Boston scientist employing questionable techniques. A British scientist resented by his peers. Far from the limelight, each had spent years developing innovative vaccine approaches. Their work was met with scepticism and scorn. By 2020, these individuals had little proof of progress. Yet they and their colleagues wanted to be the ones to stop a virulent virus holding the world hostage. They scrambled to turn their life's work into life-saving vaccines in a matter of months, each gunning to make the big breakthrough - and to beat each other for the glory that a vaccine guaranteed. A number-one New York Times bestselling author and award-winning Wall Street Journal investigative journalist, Zuckerman takes us inside the top-secret laboratories, corporate clashes and high-stakes government negotiations that led to effective shots. Deeply reported and endlessly gripping, this is a dazzling, blow-by-blow chronicle of the most consequential scientific breakthrough of our time. It's a story of courage, genius and heroism. It's also a tale of heated rivalries, unbridled ambitions, crippling insecurities and unexpected drama. *A Shot to Save the World* is the story of how science saved the world. ***LONGLISTED FOR THE FT MCKINSEY BUSINESS BOOK OF THE YEAR 2021***

In *A Shot in the Arm*, MIT Professor Yossi Sheffi recounts the extraordinary journey to deliver Covid-19 vaccines: from scientific

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advancements to candidate vaccines and mass vaccination. It is a story of bold innovation, risk-taking, and teamwork as scientists, engineers, supply chain experts, manufacturers, and governments collaborated on the greatest product launch in history. The book also highlights the breathtaking potential of revolutionary mRNA technology and the vital lessons for combating other global challenges, including climate change.

Given current science-related crises facing the world such as climate change, the targeting and manipulation of DNA, GMO foods, and vaccine denial, the way in which we communicate science matters is vital for current and future generations of scientists and publics. The Routledge Handbook of Scientific Communication scrutinizes what we value, prioritize, and grapple with in science as highlighted by the rhetorical choices of scientists, students, educators, science gatekeepers, and lay commentators. Drawing on contributions from leading thinkers in the field, this volume explores some of the most pressing questions in this growing field of study, including: How do issues such as ethics, gender, race, shifts in the publishing landscape, and English as the lingua franca of science influence scientific communication practices? How have scientific genres evolved and adapted to current research and societal needs? How have scientific visuals developed in response to technological advances and communication needs? How is scientific communication taught to a variety of audiences? Offering a critical look at the complex relationships that characterize current scientific communication practices in academia, industry, government, and elsewhere, this Handbook will be essential reading for students, scholars, and professionals involved in the study, practice, and teaching of scientific, medical, and technical communication.

Addresses the underlying rhetoric of vaccination debates by examining the full spectrum of viewpoints to develop a nuanced way forward.

Past, Present, and Future

Why DNA Matters for Social Equality

Pandora's Lab

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Notes on a Long Year

How Scientists Used Human Cells to Combat Killer Viruses

From Blood Transfusions to Mass Vaccination, the Long and Risky History of Medical Innovation

Inside the Race to Conquer the COVID-19 Pandemic

Examines the emergence and causes of new diseases all over the world, describing a process called “spillover” where illness originates in wild animals before being passed to humans and discusses the potential for the next huge pandemic. 70,000 first printing. The ultimate guide for anyone wondering how President Joe Biden will respond to the COVID-19 pandemic—all his plans, goals, and executive orders in response to the coronavirus crisis. Shortly after being inaugurated as the 46th President of the United States, Joe Biden and his administration released this 200 page guide detailing his plans to respond to the coronavirus pandemic. The National Strategy for the COVID-19 Response and Pandemic Preparedness breaks down seven crucial goals of President Joe Biden's administration with regards to the coronavirus pandemic: 1. Restore trust with the American people. 2. Mount a safe, effective, and comprehensive vaccination campaign. 3. Mitigate spread through expanding masking, testing, data, treatments, health care workforce, and clear public health standards. 4. Immediately expand emergency relief and exercise the Defense Production Act. 5. Safely reopen schools, businesses, and travel while protecting workers. 6. Protect those most at risk and

advance equity, including across racial, ethnic and rural/urban lines. 7. Restore U.S. leadership globally and build better preparedness for future threats. Each of these goals are explained and detailed in the book, with evidence about the current circumstances and how we got here, as well as plans and concrete steps to achieve each goal. Also included is the full text of the many Executive Orders that will be issued by President Biden to achieve each of these goals. The National Strategy for the COVID-19 Response and Pandemic Preparedness is required reading for anyone interested in or concerned about the COVID-19 pandemic and its effects on American society. Drawing on startling new evidence from the mapping of the genome, an explosive new account of the genetic basis of race and its role in the human story Fewer ideas have been more toxic or harmful than the idea of the biological reality of race, and with it the idea that humans of different races are biologically different from one another. For this understandable reason, the idea has been banished from polite academic conversation. Arguing that race is more than just a social construct can get a scholar run out of town, or at least off campus, on a rail. Human evolution, the consensus view insists, ended in prehistory. Inconveniently, as Nicholas Wade argues in *A Troublesome Inheritance*, the consensus view cannot be right. And in fact, we know that populations have changed in the past few thousand years—to be lactose tolerant, for example, and

to survive at high altitudes. Race is not a bright-line distinction; by definition it means that the more human populations are kept apart, the more they evolve their own distinct traits under the selective pressure known as Darwinian evolution. For many thousands of years, most human populations stayed where they were and grew distinct, not just in outward appearance but in deeper senses as well. Wade, the longtime journalist covering genetic advances for The New York Times, draws widely on the work of scientists who have made crucial breakthroughs in establishing the reality of recent human evolution. The most provocative claims in this book involve the genetic basis of human social habits. What we might call middle-class social traits—thrift, docility, nonviolence—have been slowly but surely inculcated genetically within agrarian societies, Wade argues. These “values” obviously had a strong cultural component, but Wade points to evidence that agrarian societies evolved away from hunter-gatherer societies in some crucial respects. Also controversial are his findings regarding the genetic basis of traits we associate with intelligence, such as literacy and numeracy, in certain ethnic populations, including the Chinese and Ashkenazi Jews. Wade believes deeply in the fundamental equality of all human peoples. He also believes that science is best served by pursuing the truth without fear, and if his mission to arrive at a coherent summa of what the new genetic science does and does not tell us about race

and human history leads straight into a minefield, then so be it. This will not be the last word on the subject, but it will begin a powerful and overdue conversation.

"Here, my previous edition of *Viruses, Plagues, & History* is updated to reflect both progress and disappointment since that publication. This edition describes newcomers to the range of human infections, specifically, plagues that play important roles in this 21st century. The first is Middle East Respiratory Syndrome (MERS), an infection related to Sudden Acute Respiratory Syndrome (SARS). SARS was the first new-found plague of this century. Zika virus, which is similar to yellow fever virus in being transmitted by mosquitos, is another of the recent scourges. Zika appearing for the first time in the Americas is associated with birth defects and a paralytic condition in adults. Lastly, illness due to hepatitis viruses were observed prominently during the second World War initially associated with blood transfusions and vaccine inoculations. Since then, hepatitis virus infections have afflicted millions of individuals, in some leading to an acute fulminating liver disease or more often to a life-long persistent infection. A subset of those infected has developed liver cancer. However, in a triumph of medical treatments for infectious diseases, pharmaceuticals have been developed whose use virtually eliminates such maladies. For example, Hepatitis C virus infection has been eliminated from almost all (>97%) of its victims. This incredible result was

the by-product of basic research in virology as well as cell and molecular biology during which intelligent drugs were designed to block events in the hepatitis virus life-cycle"--

The End of Illness

A Shot to Save the World

A Troublesome Inheritance

Jennifer Doudna, Gene Editing, and the Future of the Human Race

Ethical Principles and Guidelines for the Protection of Human Subjects of Research : Appendix

Framework for Equitable Allocation of COVID-19 Vaccine

A Shot in the Arm

Vaccinology, the concept of a science ranging from the study of immunology to the development and distribution of vaccines, was a word invented by Jonas Salk. This book covers the history of the methodological progress in vaccine development and to the social and ethical issues raised by vaccination. Chapters include "Jenner and the Vaccination against Smallpox," "Viral Vaccines," and "Ethical and Social Aspects of vaccines." Contributing authors include pioneers in the field, such as Samuel L. Katz and Hilary Koprowski. This history of vaccines is relatively short and many of its protagonists are still alive. This book was written by some of the chief actors in the drama whose subject matter is the conquest of epidemic disease.

****LONGLISTED FOR THE WELLCOME BOOK PRIZE 2018 ** ** A GUARDIAN SCIENCE BOOK OF THE**

YEAR 2017 ** 'Riveting ... invites comparison to Rebecca Skloot's The Immortal Life of Henrietta Lacks' Nature The epic and controversial story of a major breakthrough in cell biology that led to the conquest of rubella and other devastating diseases. Until the late 1960s, tens of thousands of children suffered crippling birth defects if their mothers had been exposed to rubella, popularly known as German measles, while pregnant. There was no vaccine and little understanding of how the disease devastated foetuses. In June 1962, a young biologist in Philadelphia produced the first safe, clean cells that made possible the mass-production of vaccines against many common childhood diseases. Two years later, in the midst of a German measles epidemic, his colleague developed the vaccine that would one day effectively wipe out rubella for good. This vaccine - and others made with those cells - have since protected hundreds of millions of people worldwide, the vast majority of them preschool children. Meredith Wadman's account of this great leap forward in medicine is a fascinating and revelatory read. If you have a child in school, you may have heard stories of long-dormant diseases suddenly reappearing—cases of measles, mumps, rubella, and whooping cough cropping up everywhere from elementary schools to Ivy League universities because a select group of parents refuse to vaccinate their children. Between Hope and Fear tells the remarkable story of vaccine-preventable infectious diseases

and their social and political implications. While detailing the history of vaccine invention, Kinch reveals the ominous reality that our victories against vaccine-preventable diseases are not permanent—and could easily be undone. In the tradition of John Barry’s *The Great Influenza* and Siddhartha Mukherjee’s *The Emperor of All Maladies*, *Between Hope and Fear* relates the remarkable intersection of science, technology, and disease that has helped eradicate many of the deadliest plagues known to man.

Public health officials state that vaccines are safe and effective, but the truth is far more complicated. Vaccination is a serious medical intervention that always carries the potential to injure and cause death as well as to prevent disease. Coercive vaccination policies deprive people of free and informed consent—the hallmark of ethical medicine. Americans are increasingly concerned about vaccine safety and the right to make individual, informed choices together with their healthcare practitioners. *Vaccine Epidemic* focuses on the searing debate surrounding individual and parental vaccination choice in the United States. Habakus, Holland, and Rosenberg edit and introduce a diverse array of interrelated topics concerning the explosive vaccine controversy, including the ethics of vaccination mandates, corrupting conflicts of interest in the national vaccine program, and personal narratives of parents, children, and soldiers who have suffered vaccine injury. Newly updated with additional chapters focusing on

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institutional scientific misconduct, mandates for healthcare workers, concerns about HPV vaccine development, and the story behind the Supreme Court's recent vaccine decision, Vaccine Epidemic remains the essential handbook for the vaccination choice movement and required reading for all people contemplating vaccination for themselves and their children.

An Inoculation

**The History and Future of Quarantine
Between Hope and Fear**

On Immunity

**The Inside Story of the Race for a COVID-19
Vaccine**

**The Dark History of Medical Experimentation on
Black Americans from Colonial Times to the
Present**

The Belmont Report

Award-winning journalist Brendan Borrell brings the defining story of our times alive through compulsively readable, first-time reporting on the players driving the race against a vicious pandemic. Soon to be the subject of an HBO limited series, Borrell draws on exclusive, high-level access to weave together the intense vaccine-race conflicts among hard-driving, heroic scientists and the epic rivalries among Washington power players that shaped 18 months of fear, resolve, and triumph. Print run 75,000.

****SHORTLISTED FOR THE WELLCOME BOOK PRIZE** **A
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Henrietta Lacks' Nature The epic and controversial story of a
major breakthrough in cell biology that led to the conquest of
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What happens when ideas presented as science lead us in the wrong direction? History is filled with brilliant ideas that gave rise to disaster, and this book explores the most fascinating—and significant—missteps: from opium's heyday as the pain reliever of choice to recognition of opioids as a major cause of death in the U.S.; from the rise of trans fats as the golden ingredient for tastier, cheaper food to the heart disease epidemic that followed; and from the cries to ban DDT for the sake of the environment to an epidemic-level rise in world malaria. These are today's sins of science—as deplorable as mistaken past ideas about advocating racial purity or using lobotomies as a cure for mental illness. These unwitting errors add up to seven lessons both cautionary and profound, narrated by renowned author and speaker Paul A. Offit. Offit uses these lessons to investigate how we can separate good science from bad, using some of today's most controversial creations—e-cigarettes, GMOs, drug treatments for ADHD—as case studies. For every "Aha!" moment that should have been an "Oh no," this book is an engrossing

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account of how science has been misused disastrously—and how we can learn to use its power for good.

Winners of the Paul Ehrlich Prize The dramatic story of the married scientists who founded BioNTech and developed the first vaccine against COVID-19. Nobody thought it was possible. In mid-January 2020, Ugur Sahin told Özlem Türeci, his wife and decades-long research partner, that a vaccine against what would soon be known as COVID-19 could be developed and safely injected into the arms of millions before the end of the year. His confidence was built upon almost thirty years of research. While working to revolutionize the way that cancerous tumors are treated, the couple had explored a volatile and overlooked molecule called messenger RNA; they believed it could be harnessed to redirect the immune system's forces against any number of diseases. As the founders of BioNTech, they faced widespread skepticism from the scientific community at first; but by the time Sars-Cov-2 was discovered in Wuhan, China, BioNTech was prepared to deploy cutting edge technology and create the world's first clinically approved inoculation for the coronavirus. The Vaccine draws back the curtain on one of the most important medical breakthroughs of our age; it will reveal how Doctors Sahin and Türeci were able to develop twenty vaccine candidates within weeks, convince Big Pharma to support their ambitious project, navigate political interference from the Trump administration and the European Union, and provide more than three billion doses of the Pfizer/BioNTech vaccine to countries around the world in record time. Written by Joe Miller—the Financial Times' Frankfurt correspondent who covered BioNTech's COVID-19 project in real time—with contributions from Sahin and Türeci, as well as interviews with more than sixty scientists, politicians, public health officials, and BioNTech staff, the book covers key events throughout the extraordinary year, as

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well as exploring the scientific, economic, and personal background of each medical innovation. Crafted to be both completely accessible to the average reader and filled with details that will fascinate seasoned microbiologists, The Vaccine explains the science behind the breakthrough, at a time when public confidence in vaccine safety and efficacy is crucial to bringing an end to this pandemic.

Vaccine Rhetorics

History of Vaccine Development

How Science, Engineering, and Supply Chains Converged to Vaccinate the World

The Routledge Handbook of Scientific Communication

The Great Influenza

The Vaccine Race

How Corporate Greed, Biased Science, and Coercive Government Threaten Our Human Rights, Our Health, and Our Children

Vaccine reluctance and refusal are no longer limited to the margins of society. Debates around vaccines' necessity -- along with questions around their side effects -- have gone mainstream, blending with geopolitical conflicts, political campaigns, celebrity causes, and "natural" lifestyles to win a growing number of hearts and minds. Today's anti-vaccine positions find audiences where they've never existed previously. Stuck examines how the issues surrounding vaccine hesitancy are, more than anything, about people feeling left out of the conversation. A new dialogue is long overdue, one that addresses the many types of vaccine hesitancy and the social

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factors that perpetuate them. To do this, Stuck provides a clear-eyed examination of the social vectors that transmit vaccine rumors, their manifestations around the globe, and how these individual threads are all connected.

Challenges popular conceptions to outline new methods for promoting wellness and longevity, arguing that traditional medicine has not been successful in treating serious illness while urging readers to embrace a systemic understanding of the body that incorporates the use of revolutionary technologies.

"Thought-provoking...[Allen] writes without sanctimony and never simplifies the people in his book or the moral issues his story inevitably raises." —Wall Street Journal

Few diseases are more gruesome than typhus. Transmitted by body lice, it afflicts the dispossessed—refugees, soldiers, and ghettoized peoples—causing hallucinations, terrible headaches, boiling fever, and often death. The disease plagued the German army on the Eastern Front and left the Reich desperate for a vaccine. For this they turned to the brilliant and eccentric Polish zoologist Rudolf Weigl. In the 1920s, Weigl had created the first typhus vaccine using a method as bold as it was dangerous for its use of living human subjects. The astonishing success of Weigl's techniques attracted the attention and admiration of the world—giving him

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cover during the Nazi's violent occupation of Lviv. His lab soon flourished as a hotbed of resistance. Weigl hired otherwise doomed mathematicians, writers, doctors, and other thinkers, protecting them from atrocity. The team engaged in a sabotage campaign by sending illegal doses of the vaccine into the Polish ghettos while shipping gallons of the weakened serum to the Wehrmacht. Among the scientists saved by Weigl, who was a Christian, was a gifted Jewish immunologist named Ludwik Fleck. Condemned to Buchenwald and pressured to re-create the typhus vaccine under the direction of a sadistic Nazi doctor, Erwin Ding-Schuler, Fleck had to make an awful choice between his scientific ideals or the truth of his conscience. In risking his life to carry out a dramatic subterfuge to vaccinate the camp's most endangered prisoners, Fleck performed an act of great heroism. Drawing on extensive research and interviews with survivors, Arthur Allen tells the harrowing story of two brave scientists—a Christian and a Jew— who put their expertise to the best possible use, at the highest personal danger. This is the incredible story of the scientists who created a coronavirus vaccine in record time. In *Longshot*, investigative journalist David Heath takes readers inside the small group of scientists whose groundbreaking work was once largely dismissed but whose feat will now eclipse the

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importance of Jonas Salk's polio vaccine in medical history. With never-before-reported details, Heath reveals how these scientists overcame countless obstacles to give the world an unprecedented head start when we needed a COVID-19 vaccine. The story really begins in the 1990s, with a series of discoveries that were timed perfectly to prepare us for the worst pandemic since 1918. Readers will meet Katalin Karikó, who made it possible to use messenger RNA in vaccines but struggled for years just to hang on to her job. There's also Derrick Rossi, who leveraged Karikó's work to found Moderna but was eventually expelled from his company. And then there's Barney Graham at the National Institutes of Health, who had a career-long obsession with solving the riddle of why two toddlers died in a vaccine trial in 1966, a tragedy that ultimately led to a critical breakthrough in vaccine science. With both foresight and luck, Graham and these other crucial scientists set the course for a coronavirus vaccine years before COVID-19 emerged in Wuhan, China. The author draws on hundreds of hours of interviews with key players to tell the definitive story about how the race to create the vaccine sparked a revolution in medical science.

What Just Happened

*A Pioneering Moment in Scientific History
Until Proven Safe*

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Viruses

Vaccine Science Revisited

*The Remarkable Race and Ground-Breaking
Science Behind the Covid-19 Vaccines*

Medical Apartheid

Are Childhood Immunizations As Safe As Claimed?

"A real jewel of science history...brims with suspense and now-forgotten catastrophe and intrigue...Wadman's smooth prose calmly spins a surpassingly complicated story into a real tour de force."—The New York Times
"Riveting . . . [The Vaccine Race] invites comparison with Rebecca Skloot's 2007 *The Immortal Life of Henrietta Lacks*."—Nature
The epic and controversial story of a major breakthrough in cell biology that led to the conquest of rubella and other devastating diseases. Until the late 1960s, tens of thousands of American children suffered crippling birth defects if their mothers had been exposed to rubella, popularly known as German measles, while pregnant; there was no vaccine and little understanding of how the disease devastated fetuses. In June 1962, a young biologist in Philadelphia, using tissue extracted from an aborted fetus from Sweden, produced safe, clean cells that allowed the creation of vaccines against rubella and other common childhood diseases. Two years later, in the midst of a

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devastating German measles epidemic, his colleague developed the vaccine that would one day wipe out homegrown rubella. The rubella vaccine and others made with those fetal cells have protected more than 150 million people in the United States, the vast majority of them preschoolers. The new cells and the method of making them also led to vaccines that have protected billions of people around the world from polio, rabies, chicken pox, measles, hepatitis A, shingles and adenovirus. Meredith Wadman's masterful account recovers not only the science of this urgent race, but also the political roadblocks that nearly stopped the scientists. She describes the terrible dilemmas of pregnant women exposed to German measles and recounts testing on infants, prisoners, orphans, and the intellectually disabled, which was common in the era. These events take place at the dawn of the battle over using human fetal tissue in research, during the arrival of big commerce in campus labs, and as huge changes take place in the laws and practices governing who "owns" research cells and the profits made from biological inventions. It is also the story of yet one more unrecognized woman whose cells have been used to save countless

lives. With another frightening virus--measles--on the rise today, no medical story could have more human drama, impact, or urgency than *The Vaccine Race*.

#1 New York Times bestseller "Barry will teach you almost everything you need to know about one of the deadliest outbreaks in human history."—Bill Gates "Monumental... an authoritative and disturbing morality tale."—Chicago Tribune The strongest weapon against pandemic is the truth. Read why in the definitive account of the 1918 Flu Epidemic. Magisterial in its breadth of perspective and depth of research, *The Great Influenza* provides us with a precise and sobering model as we confront the epidemics looming on our own horizon. As Barry concludes, "The final lesson of 1918, a simple one yet one most difficult to execute, is that...those in authority must retain the public's trust. The way to do that is to distort nothing, to put the best face on nothing, to try to manipulate no one. Lincoln said that first, and best. A leader must make whatever horror exists concrete. Only then will people be able to break it apart." At the height of World War I, history's most lethal influenza virus erupted in an army camp in Kansas, moved east with American troops, then

exploded, killing as many as 100 million people worldwide. It killed more people in twenty-four months than AIDS killed in twenty-four years, more in a year than the Black Death killed in a century. But this was not the Middle Ages, and 1918 marked the first collision of science and epidemic disease.

A history of the anti-vaccination movement, from its nineteenth-century antecedents to today's anti-vax activism, offering strategies for refuting its claims. Vaccines are a documented success story, one of the most successful public health interventions in history. Yet there is a vocal anti-vaccination movement, featuring celebrity activists (including Kennedy scion Robert F. Kennedy Jr. and actress Jenny McCarthy) and the propagation of anti-vax claims through books, documentaries, and social media. In *Anti-Vaxxers*, Jonathan Berman explores the phenomenon of the anti-vaccination movement, recounting its history from its nineteenth-century antecedents to today's activism, examining its claims, and suggesting a strategy for countering them. After providing background information on vaccines and how they work, Berman describes resistance to Britain's Vaccination

Act of 1853, showing that the arguments anticipate those made by today's anti-vaxxers. He discusses the development of new vaccines in the twentieth century, including those protecting against polio and MMR (measles, mumps, rubella), and the debunked paper that linked the MMR vaccine to autism; the CDC conspiracy theory promoted in the documentary *Vaxxed*; recommendations for an alternative vaccination schedule; Kennedy's misinformed campaign against thimerosal; and the much-abused religious exemption to vaccination. Anti-vaxxers have changed their minds, but rarely because someone has given them a list of facts. Berman argues that anti-vaccination activism is tied closely to how people see themselves as parents and community members. Effective pro-vaccination efforts should emphasize these cultural aspects rather than battling social media posts. One of America's top physicians traces the history of risk in medicine—with powerful lessons for today Every medical decision—whether to have chemotherapy, an X-ray, or surgery—is a risk, no matter which way you choose. In *You Bet Your Life*, physician Paul A. Offit argues that, from the first blood transfusions four hundred years

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ago to the hunt for a COVID-19 vaccine, risk has been essential to the discovery of new treatments. More importantly, understanding the risks is crucial to whether, as a society or as individuals, we accept them. Told in Offit's vigorous and rigorous style, *You Bet Your Life* is an entertaining history of medicine. But it also lays bare the tortured relationships between intellectual breakthroughs, political realities, and human foibles. Our pandemic year has shown us, with its debates over lockdowns, masks, and vaccines, how easy it is to get everything wrong. *You Bet Your Life* is an essential read for getting the future a bit more right.

Genes, Race and Human History

Vaccine Court

Bad Science, Risky Medicine, and the Search for a Cure

Autism's False Prophets

January 2021

The First Shots

An unbiased, neutral, fact-based investigation that simply allows the science to do the talking on childhood vaccinations. Written by father and son investigative journalism/research team Lance & James Morcan, with a foreword by medical laboratory scientist Elisabet Norris, *VACCINE SCIENCE REVISITED* is possibly the most well-referenced work yet to explore this contentious healthcare subject. This exhaustively-researched book avoids all

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rumor, conjecture and anecdotal evidence, and steadfastly focuses on what the latest medical studies actually reveal about vaccines listed on the immunization schedule. One by one the ingredients of the vaccines being manufactured today are put under the microscope by comparing peer-reviewed, published studies. By collaborating with a professional medical advisory team and utilizing investigative journalism methods, the Morcans have painstakingly sifted through the world's best scientific research papers. They analyze the most reliable and untainted studies in order to uncover true and accurate data on vaccine safety. No matter your level of education or experience - whether you are a doctor, layman, scientist, nurse, med student or new parent - be prepared to be surprised by many of the medical research findings in VACCINE SCIENCE REVISITED: Are Childhood Immunizations As Safe As Claimed?

NATIONAL BOOK CRITICS CIRCLE AWARD WINNER • The first full history of Black America's shocking mistreatment as unwilling and unwitting experimental subjects at the hands of the medical establishment. No one concerned with issues of public health and racial justice can afford not to read this masterful book. "[Washington] has unearthed a shocking amount of information and shaped it into a riveting, carefully documented book." —New York Times From the era of slavery to the present day, starting with the earliest encounters between Black Americans and Western medical researchers and the racist pseudoscience that resulted, *Medical Apartheid* details the ways both slaves and freedmen were used in hospitals for experiments conducted without their knowledge—a tradition that continues today within some black populations. It reveals how Blacks have historically been prey to grave-robbing as well as unauthorized autopsies and dissections. Moving into the twentieth century, it shows how the pseudoscience of eugenics and social Darwinism was used to justify experimental exploitation and shoddy medical treatment of Blacks. Shocking new details about the government's notorious Tuskegee experiment are revealed, as are

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similar, less-well-known medical atrocities conducted by the government, the armed forces, prisons, and private institutions. The product of years of prodigious research into medical journals and experimental reports long undisturbed, *Medical Apartheid* reveals the hidden underbelly of scientific research and makes possible, for the first time, an understanding of the roots of the African American health deficit. At last, it provides the fullest possible context for comprehending the behavioral fallout that has caused Black Americans to view researchers—and indeed the whole medical establishment—with such deep distrust.

"A writer and literary critic's diary of the year 2020, beginning with the outbreak of the COVID-19 pandemic and spanning the protests for racial justice and the chaos of the U.S. presidential election"--
Vaccine: The Controversial Story of Medicine's Greatest Lifesaver