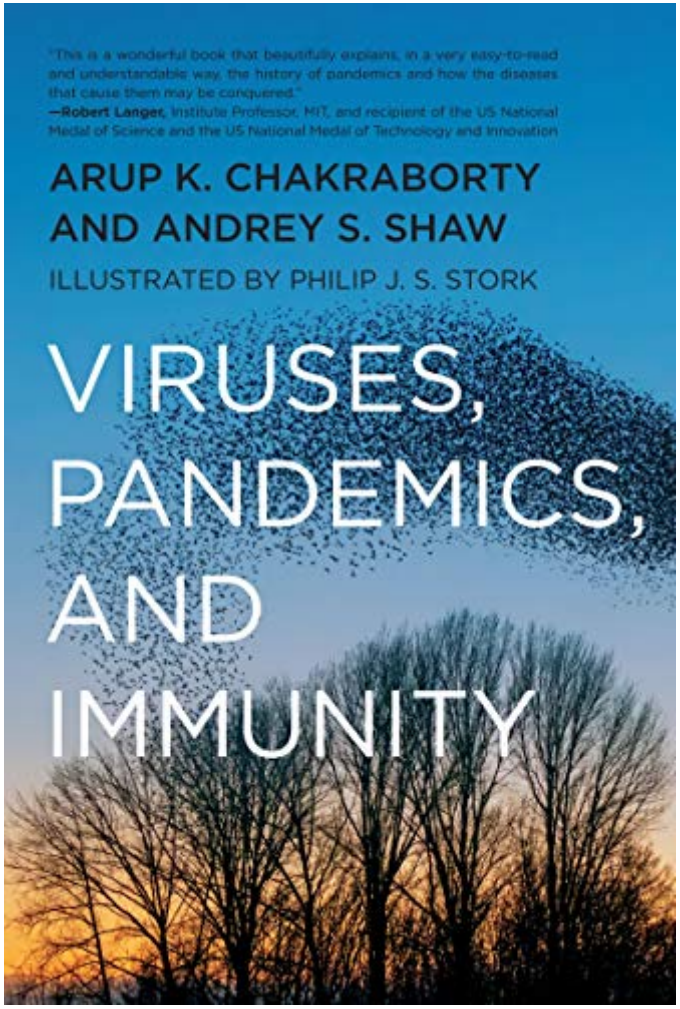

[DOC] Viruses, Pandemics, And Immunity

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Viruses, Pandemics, and Immunity-Arup K. Chakraborty 2021-02-16
How viruses emerge to cause pandemics, how our immune system combats them, and how diagnostic tests, vaccines, and antiviral therapies work. Throughout history, humans have contended with pandemics. History is replete with references to plagues, pestilence, and contagion, but the devastation wrought by pandemics had been largely forgotten by the twenty-first century. Now, the enormous human and economic toll of the rapidly spreading COVID-19 disease offers a vivid reminder that infectious disease pandemics are one of the greatest existential threats to humanity. This book provides an accessible explanation of how viruses emerge to cause pandemics, how our immune system combats them, and how diagnostic tests, vaccines, and antiviral therapies work-- concepts that are a foundation for our public health policies.

Viruses, Pandemics, and Immunity-Arup K. Chakraborty 2021-02-16
"Informed and accessible overview of viruses and pandemics, how our immune system combats them, and how diagnostic tests, vaccines, and antiviral therapies work to form the foundation of public health"--

Viruses, Pandemics, and Immunity-Arup K. Chakraborty 2020-09-08
How viruses emerge to cause pandemics, how our immune system combats them, and how diagnostic tests, vaccines, and antiviral therapies work. Throughout history, humans have contended with pandemics. History is replete with references to plagues, pestilence, and contagion, but the devastation wrought by pandemics had been largely forgotten by the twenty-first century. Now, the enormous human and economic toll of the rapidly spreading COVID-19 disease offers a vivid reminder that infectious disease pandemics are one of the greatest existential threats to humanity. This book provides an accessible explanation of how viruses emerge to cause pandemics, how our immune system combats them, and how diagnostic tests, vaccines, and antiviral therapies work-- concepts that are a foundation for our public health policies.

The Threat of Pandemic Influenza-Institute of Medicine 2005-04-09
Public health officials and organizations around the world remain on high alert because of increasing concerns about the prospect of an influenza pandemic, which many experts believe to be inevitable. Moreover, recent problems with the availability and strain-specificity of vaccine for annual flu epidemics in some countries and the rise of pandemic strains of avian flu in disparate geographic regions have alarmed experts about the world's ability to prevent or contain a human pandemic. The workshop summary, The Threat of Pandemic Influenza: Are We Ready? addresses these urgent concerns. The report describes what steps the United States and other

countries have taken thus far to prepare for the next outbreak of "killer flu." It also looks at gaps in readiness, including hospitals' inability to absorb a surge of patients and many nations' incapacity to monitor and detect flu outbreaks. The report points to the need for international agreements to share flu vaccine and antiviral stockpiles to ensure that the 88 percent of nations that cannot manufacture or stockpile these products have access to them. It chronicles the toll of the H5N1 strain of avian flu currently circulating among poultry in many parts of Asia, which now accounts for the culling of millions of birds and the death of at least 50 persons. And it compares the costs of preparations with the costs of illness and death that could arise during an outbreak.

Economics in the Age of COVID-19-Joshua Gans 2020-05-19 A guide to the pandemic economy: essential reading about the long-term implications of our current crisis. The COVID-19 pandemic has unleashed a firehose of information (much of it wrong) and an avalanche of opinions (many of them ill-founded). Most of us are so distracted by the everyday awfulness that we don't see the broader issues in play. In this book, economist Joshua Gans steps back from the short-term chaos to take a clear and systematic look at how economic choices are being made in response to COVID-19. He shows that containing the virus and pausing the economy—without letting businesses fail and people lose their jobs—are the necessary first steps.

Viruses, Plagues, and History-Michael B. A. Oldstone 2020 "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"--

Viruses, Immunity, and Mental Disorders-Edouard Kurstak 2014-01-13 In spite of progress in biomedical research, we know little about the causes, prevention, and treatment of the numerous mental and neurological disorders that afflict up to 15% of all individuals. In the last decade, great advances have been made in the physiopathology of mental and neurological disorders, leading to at least a partial control of Parkinson's disease, epilepsy, certain psychoses, and anxiety syndromes. Despite the fact that an underlying specific neurotransmitter deficiency has been demonstrated in Alzheimer's and Parkinson's diseases, the immune dysfunction and viral hypotheses continue to be attractive for investigators dealing with these degenerative diseases of the aging brain, which afflict 10% of senior citizens. A retrospective epidemiologic study suggests that the encephalitis lethargica and parkinsonism were almost certainly caused by the 1918 influenza virus pandemics. It must be stressed that the etiopathogenesis of many mental disorders is not known, and this ignorance has led to several untenable neurophysiological and biochemical hypotheses. Epidemiologic investigations show a high prevalence of functional psychoses and organic mental disorders. Although many of them are conceptualized as biopsychosocial disorders, recent data indicate that the biological component appears more and more as a major etiologic factor. Among the various biological hypotheses, the viral and im munologic concept has become a significant one. In view of recent discoveries in virology and immunity, it becomes clear that viral and immunologic hypotheses should be inves tigated more systematically concerning the mechanisms of numerous mental and neu rological disorders.

Pandemics-Peter C. Doherty 2013-10-31 Though the word "pandemic" often conjures up an immediate vision of an appalling, acutely lethal and visually terrifying disease, in actuality, these really aren't the infections that we have to worry about when it comes to rapid, global spread. In Pandemics: What Everyone Needs to Know, Peter Doherty demystifies the Hollywood version of global infections and considers instead what pandemics really are, what situations encourage their spread, and which pathogens pose the greatest threat today. He also explains the various responses available to combat outbreaks and mitigate their effects, from the use of vaccines and drugs to quarantine.

Janeway's Immunobiology-Murphy, Kenneth M. 2016-03-22 Explore the premier text for immunology at the advanced undergraduate, graduate, and medical school levels. Beginning students appreciate the bookÕs clear writing and informative illustrations, while advanced students and working immunologists value its comprehensive scope and depth. This edition is thoroughly revised and up to date with significant developments in the field, especially on the topic of innate immunity.

Apollo's Arrow-Nicholas A. Christakis 2020-10-27 A piercing and scientifically grounded look at the emergence of the coronavirus pandemic and how it will change the way we live — "excellent and timely." (The New Yorker) Apollo's Arrow offers a riveting account of the impact of the coronavirus pandemic as it swept through American society in 2020, and of how the recovery will unfold in the coming years. Drawing on momentous (yet dimly remembered) historical epidemics, contemporary analyses, and cutting-edge research from a range of scientific disciplines, bestselling author, physician, sociologist, and public health expert Nicholas A. Christakis explores what it means to live in a time of plague — an experience that is paradoxically uncommon to the vast majority of humans who are alive, yet deeply fundamental to our species. Unleashing new divisions in our society as well as opportunities for cooperation, this 21st-century pandemic has upended our lives in ways that will test, but not vanquish, our already frayed collective culture. Featuring new, provocative arguments and vivid examples ranging across medicine, history, sociology, epidemiology, data science, and genetics, Apollo's Arrow envisions what happens when the great force of a deadly germ meets the enduring reality of our evolved social nature.

The End of October-Lawrence Wright 2021-04-27 An Instant New York Times Bestseller From the Pulitzer Prize-winning author of The Looming Tower--a riveting thriller and "all-too-convincing chronicle of science, espionage, action and speculation" (The Wall Street Journal) At an internment camp in Indonesia, forty-seven people are pronounced dead with acute hemorrhagic fever. When epidemiologist Henry Parsons travels there on behalf of the World Health Organization to investigate, what he finds will have staggering repercussions. Halfway across the globe, the deputy director of U.S. Homeland Security scrambles to mount a response to the rapidly spreading pandemic leapfrogging around the world, which she believes may be the result of an act of biowarfare. And a rogue experimenter in man-made diseases is preparing his own terrifying solution. As already-fraying global relations begin to snap, the virus slashes across the United States, dismantling institutions and decimating the population. With his own wife and children facing diminishing odds of survival, Henry travels from Indonesia to Saudi Arabia to his home base at the CDC in Atlanta, searching for a cure and for the origins of this seemingly unknowable disease. The End of October is a one-of-a-kind thriller steeped in real-life political and scientific implications, filled with the insight that has been the hallmark of Wright's acclaimed nonfiction and the full-tilt narrative suspense that only the best fiction can offer.

Immune System Hacks-Matt Farr 2020-12-15 Optimize your health with these 175+ quick, actionable ways to boost your immune system and beat the common cold every season. From taking a day off of work to stay in bed to having to run out to the store for last minute medicine that you were sure you had, no one enjoys being sick. But what if there were quick and easy ways to boost your immune system so you could feel your best all year long? In Immune System Hacks discover over 175 practical steps you can use right away to boost your immune system and stay healthy throughout the year. These expert tips have everything you ever need to know about living your best, healthiest life, including: -Exercises that build and strengthen the

immune system -Simple lifestyle choices that help guard against diseases -Environmental factors that affect the immune system -Immunity-boosting foods, vitamins, minerals, herbs, and supplements -The connection between gut health and the immune system -And more! Feel your best with the easy-to-follow advice in Immune System Hacks!

Disease Control Priorities, Third Edition-Hellen Gelband 2017-12-06 Annotation This volume discusses health system policies (including financing global health, quality of care, and strengthening regulatory systems in low- and middle-income countries), as well as the methods and resources used throughout all DCP3 volumes.

Rocks, Minerals, and Geology of the Pacific Northwest-Leslie Moclock 2021-03-16 Rocks, Minerals, and Geology of the Pacific Northwest highlights100 rocks, minerals, and fossil types found in Oregon and Washington. Each entry has color photography that shows a range of possibilities in appearance and a description of the defining physical properties and textures. Lists of minerals organized by other physical properties like habit, hardness, and cleavage are included. Rocks, Minerals, and Geology of the Pacific Northwest also includes 40 landscape features viewable along trails in Washington and Oregon that will empower hikers to make observations and interpretations about how these features came to be. The essential reference for rock hounds, hikers, climbers, and geology enthusiasts More than 400 photographs, illustrations, tables, and maps showcase and explain everything from minuscule crystals to planetary tectonics Interprets the histories of dominant landscape features along regional hiking trails Profiles more than 100 minerals and rocks in detailed entries with photos, descriptions, identification graphics, and mini indexes Covers the geologic composition and 13 physiographic regions of Washington and Oregon

Pandemic Influenza Preparedness and Response- 2009 "Influenza pandemics are unpredictable but recurring events that can have severe consequences on societies worldwide. This revised WHO guidance publication on pandemic influenza preparedness and response acknowledges that pandemic preparedness is centered around health sectors planning but must also be broader. WHO therefore advocates a "whole-of-society" approach to sustainable and ethical pandemic preparedness while focusing in more detail on the role of the health sector. The roles of WHO and national governments are outlined to create a better understanding of how health and non-health sectors, both public and private, all contribute to pandemic preparedness"--Publisher's description.

America's Forgotten Pandemic-Alfred W. Crosby 2003-07-21 Between August 1918 and March 1919 the Spanish influenza spread worldwide, claiming over 25 million lives - more people than perished in the fighting of the First World War. It proved fatal to at least a half-million Americans. Yet, the Spanish flu pandemic is largely forgotten today. In this vivid narrative, Alfred W. Crosby recounts the course of the pandemic during the panic-stricken months of 1918 and 1919, measures its impact on American society, and probes the curious loss of national memory of this cataclysmic event. This 2003 edition includes a preface discussing the then recent outbreaks of diseases, including the Asian flu and the SARS epidemic.

Viral Pathogenesis-Michael G. Katze 2015-12-30 Viral Pathogenesis: From Basics to Systems Biology, Third Edition, has been thoroughly updated to cover topical advances in the evolving field of viral pathogenesis, while also providing the requisite classic foundational information for which it is recognized. The book provides key coverage of the newfound ability to profile molecular events on a system-wide scale, which has led to a deeper understanding of virus-host interactions, host signaling and molecular-interaction networks, and the role of host genetics in determining disease outcome. In addition, the content has been augmented with short chapters on seminal breakthroughs and profiles of their progenitors, as well as short commentaries on important or controversial issues in the field. Thus, the reader will be given a view of virology research with perspectives on issues such as biomedical ethics, public health policy, and human health. In summary, the third edition will give the student a sense of the exciting new perspectives on viral pathogenesis that have been provided by recent developments in genomics, computation, modeling, and systems biology.

Covers all aspects of viral infection, including viral entry, replication, and release, as well as innate and adaptive immunity and viral pathogenesis Provides a fresh perspective on the approaches used to understand how viruses cause disease Features molecular profiling techniques, whole genome sequencing, and innovative computational methods Highlights the use of contemporary approaches and the insights they provide to the field

Ethical and Legal Considerations in Mitigating Pandemic Disease-Institute of Medicine 2007-07-08 In recent public workshops and working group meetings, the Forum on Microbial Threats of the Institute of Medicine (IOM) has examined a variety of infectious disease outbreaks with pandemic potential, including those caused by influenza (IOM, 2005) and severe acute respiratory syndrome (SARS) (IOM, 2004). Particular attention has been paid to the potential pandemic threat posed by the H5N1 strain of avian influenza, which is now endemic in many Southeast Asian bird populations. Since 2003, the H5N1 subtype of avian influenza has caused 185 confirmed human deaths in 11 countries, including some cases of viral transmission from human to human (WHO, 2007). But as worrisome as these developments are, at least they are caused by known pathogens. The next pandemic could well be caused by the emergence of a microbe that is still unknown, much as happened in the 1980s with the emergence of the human immunodeficiency virus (HIV) and in 2003 with the appearance of the SARS coronavirus. Previous Forum meetings on pandemic disease have discussed the scientific and logistical challenges associated with pandemic disease recognition, identification, and response. Participants in these earlier meetings also recognized the difficulty of implementing disease control strategies effectively. Ethical and Legal Considerations in Mitigating Pandemic Disease: Workshop Summary as a factual summary of what occurred at the workshop.

Avian Immunology-Karel A. Schat 2012-12-02 The second edition of Avian Immunology provides an up-to-date overview of the current knowledge of avian immunology. From the ontogeny of the avian immune system to practical application in vaccinology, the book encompasses all aspects of innate and adaptive immunity in chickens. In addition, chapters are devoted to the immunology of other commercially important species such as turkeys and ducks, and to ecoimmunology summarizing the knowledge of immune responses in free-living birds often in relation to reproductive success. The book contains a detailed description of the avian innate immune system, encompassing the mucosal, enteric, respiratory and reproductive systems. The diseases and disorders it covers include immunodepressive diseases and immune evasion, autoimmune diseases, and tumors of the immune system. Practical aspects of vaccination are examined as well. Extensive appendices summarize resources for scientists including cell lines, inbred chicken lines, cytokines, chemokines, and monoclonal antibodies. The world-wide importance of poultry protein for the human diet, as well as the threat of avian influenza pandemics like H5N1 and heavy reliance on vaccination to protect commercial flocks makes this book a vital resource. This book provides crucial information not only for poultry health professionals and avian biologists, but also for comparative and veterinary immunologists, graduate students and veterinary students with an interest in avian immunology. With contributions from 33 of the foremost international experts in the field, this book provides the most up-to-date review of avian immunology so far Contains a detailed description of the avian innate immune system reviewing constitutive barriers, chemical and cellular responses; it includes a comprehensive review of avian Toll-like receptors Contains a wide-ranging review of the "ecoimmunology" of free-living avian species, as applied to studies of population dynamics, and reviews methods and resources available for carrying out such research

Understanding Coronavirus-Raul Rabadan 2020-07-09 Why is information about the coronavirus/COVID-19 so confusing? Grasp the key facts in this concise, accessible and authoritative book.

The Viral Storm-Nathan Wolfe 2011-10-11 A Stanford biologist reveals the lesser-known origins of some of the world's most deadly viruses while explaining the link between modern life and global pandemic threats, recounting his research missions in various world regions while sharing insights into how developing technologies may counter potential threats. 75,000 first printing.

Pandemic Protection-Don Colbert 2020-05-19 From New York Times Best Selling Author Dr. Don Colbert Prepare your immune system before you need it. Many believe the pandemic crisis of 2020 is only a foretaste of things to come. If so, it serves as a wake-up call to remind us of the urgency of protecting our health. Since the outbreak of COVID-19, the entire world has had to rethink the way we do health. With this new paradigm backed by the latest scientific research, Don Colbert, MD, brings you cutting-edge medical advice and tells you everything you need to know to optimize your body's immune system, avoid exposure, detect the early warning signs, and treat and recover from illness during pandemics like COVID-19. You'll learn: What the Bible and past pandemics can teach us about outbreaks How telemedicine and technology are changing the way we do healthcare How the key to a strong immune system is a healthy gut Ways to protect your health through diet, natural supplements, and the latest breakthrough medical treatments We don't have to live in fear. The good news is that we can learn from this pandemic as well as those in the past, and we can arm ourselves with the tools we need to be prepared for pandemic outbreaks both now and in the future. After reading this book, you will know what to do to optimize your health, protect your family, and detect the early warning signs of disease outbreaks.

The Pandemic Century: One Hundred Years of Panic, Hysteria, and Hubris-Mark Honigsbaum 2019-04-09 With a New Chapter and Updated Epilogue on Coronavirus A Financial Times Best Health Book of 2019 and a New York Times Book Review Editors’ Choice "Honigsbaum does a superb job covering a century’s worth of pandemics and the fears they invariably unleash." —Howard Markel, MD, PhD, director of the Center for the History of Medicine, University of Michigan How can we understand the COVID-19 pandemic? Ever since the 1918 Spanish influenza pandemic, scientists have dreamed of preventing such catastrophic outbreaks of infectious disease. Yet despite a century of medical progress, viral and bacterial disasters continue to take us by surprise, inciting panic and dominating news cycles. In The Pandemic Century, a lively account of scares both infamous and less known, medical historian Mark Honigsbaum combines reportage with the history of science and medical sociology to artfully reconstruct epidemiological mysteries and the ecology of infectious diseases. We meet dedicated disease detectives, obstructive or incompetent public health officials, and brilliant scientists often blinded by their own knowledge of bacteria and viruses—and see how fear of disease often exacerbates racial, religious, and ethnic tensions. Now updated with a new chapter and epilogue.

Epidemics and Society-Frank M. Snowden 2019-10-22 A wide-ranging study that illuminates the connection between epidemic diseases and societal change, from the Black Death to Ebola This sweeping exploration of the impact of epidemic diseases looks at how mass infectious outbreaks have shaped society, from the Black Death to today. In a clear and accessible style, Frank M. Snowden reveals the ways that diseases have not only influenced medical science and public health, but also transformed the arts, religion, intellectual history, and warfare. A multidisciplinary and comparative investigation of the medical and social history of the major epidemics, this volume touches on themes such as the evolution of medical therapy, plague literature, poverty, the environment, and mass hysteria. In addition to providing historical perspective on diseases such as smallpox, cholera, and tuberculosis, Snowden examines the fallout from recent epidemics such as HIV/AIDS, SARS, and Ebola and the question of the world’s preparedness for the next generation of diseases.

Global Health and the Future Role of the United States-National Academies of Sciences, Engineering, and Medicine 2017-09-05 While much progress has been made on achieving the Millenium Development Goals over the last decade, the number and complexity of global health challenges has persisted. Growing forces for globalization have increased the interconnectedness of the world and our interdependency on other countries, economies, and cultures. Monumental growth in international travel and trade have brought improved access to goods and services for many, but also carry ongoing and ever-present threats of zoonotic spillover and infectious disease outbreaks that threaten all. Global Health and the Future Role of the United States identifies global health priorities in light of current and emerging world threats. This report assesses the current global health landscape and how challenges, actions, and players have evolved over the last decade across a wide range of issues, and provides

recommendations on how to increase responsiveness, coordination, and efficiency â€" both within the U.S. government and across the global health field.

The Rules of Contagion-Adam Kucharski 2020-02-13 An Observer Book of the Year A Times Science Book of the Year A New Statesman Book of the Year A Financial Times Science Book of the Year 'It is hard to imagine a more timely book ... much of the modern world will make more sense having read it.' The Times A deadly virus suddenly explodes into the population. A political movement gathers pace, and then quickly vanishes. An idea takes off like wildfire, changing our world forever. We live in a world that's more interconnected than ever before. Our lives are shaped by outbreaks - of disease, of misinformation, even of violence - that appear, spread and fade away with bewildering speed. To understand them, we need to learn the hidden laws that govern them. From 'superspreaders' who might spark a pandemic or bring down a financial system to the social dynamics that make loneliness catch on, The Rules of Contagion offers compelling insights into human behaviour and explains how we can get better at predicting what happens next. Along the way, Adam Kucharski explores how innovations spread through friendship networks, what links computer viruses with folk stories - and why the most useful predictions aren't necessarily the ones that come true.

Textbook of Disaster Psychiatry-Robert J. Ursano 2017-05-23 This book presents a decade of advances in the psychological, biological and social responses to disasters, helping medics and leaders prepare and react.

Essential Human Virology-Jennifer Louten 2016-03-29 Essential Human Virology is written for the undergraduate level with case studies integrated into each chapter. The structure and classification of viruses will be covered, as well as virus transmission and virus replication strategies based upon type of viral nucleic acid. Several chapters will focus on notable and recognizable viruses and the diseases caused by them, including influenza, HIV, hepatitis viruses, poliovirus, herpesviruses, and emerging and dangerous viruses. Additionally, how viruses cause disease, or pathogenesis, will be highlighted during the discussion of each virus family, and a chapter on the immune response to viruses will be included. Further, research laboratory assays and viral diagnosis assays will be discussed, as will vaccines, anti-viral drugs, gene therapy, and the beneficial uses of viruses. By focusing on general virology principles, current and future technologies, familiar human viruses, and the effects of these viruses on humans, this textbook will provide a solid foundation in virology while keeping the interest of undergraduate students. Focuses on the human diseases and cellular pathology that viruses cause Highlights current and cutting-edge technology and associated issues Presents real case studies and current news highlights in each chapter Features dynamic illustrations, chapter assessment questions, key terms, and summary of concepts, as well as an instructor website with lecture slides, test bank, and recommended activities

The World's Worst Problems-Walter Dodds 2019-12-02 This book addresses the worst problems currently facing humanity and those that may pose future threats. The problems are explained and approached through a scientific lens, and categorized based on data involving global mortality, vulnerability, and threat level. The book presents indices of problem severity to compare relative intensity of current and potential crises. The approach avoids emotional argument using mainly empirical evidence to support the classification of relative problem severity. The author discusses multiple global problems and ranks them. He also explores specific solutions to each problem, links problems to human behavior from a social science perspective, considers international cooperation, and finally pathways to solutions. The book discusses confirmation bias and why this necessitates a scientific approach to tackle problems. The moral assumption that each person has the same rights to life and minimal suffering, and that the natural world has a right to exist, forms the basis of ranking problems based on death, suffering, and harm to the natural world. A focus is given to potential disasters such as asteroid collisions and super-volcanic eruptions, which are then presented in chapters that address specific contemporary global issues including disease, hunger, nuclear weapons and climate change. Furthermore the author then ranks the problems based on an index of problem severity, considering what other people think the worst

problems are. The relative economic costs to solve each of these problems, individual behavior in the face of these problems, how people could work together internationally to combat them, and a general pathway toward solutions form the basis of the final chapters. This work will appeal to a wide range of readers, students considering how they can help the world, and scientists and policy makers interested in global problem solving./div

Molecular Virology of Human Pathogenic Viruses-Wang-Shick Ryu 2016-03-30 Molecular Virology of Human Pathogenic Viruses presents robust coverage of the key principles of molecular virology while emphasizing virus family structure and providing key context points for topical advances in the field. The book is organized in a logical manner to aid in student discoverability and comprehension and is based on the author's more than 20 years of teaching experience. Each chapter will describe the viral life cycle covering the order of classification, virion and genome structure, viral proteins, life cycle, and the effect on host and an emphasis on virus-host interaction is conveyed throughout the text. Molecular Virology of Human Pathogenic Viruses provides essential information for students and professionals in virology, molecular biology, microbiology, infectious disease, and immunology and contains outstanding features such as study questions and recommended journal articles with perspectives at the end of each chapter to assist students with scientific inquiries and in reading primary literature. Presents viruses within their family structure Contains recommended journal articles with perspectives to put primary literature in context Includes integrated recommended reading references within each chapter Provides access to online ancillary package inclusive of annotated PowerPoint images, instructor's manual, study guide, and test bank

Emerging Viruses: Host Immunity and Novel Therapeutic Interventions-Alan Chen-Yu Hsu 2019-02-20

An Elegant Defense-Matt Richtel 2019-03-12 National Bestseller "One of those rare nonfiction books that transcends the genre. ... Extraordinary." —Douglas Preston, New York Times bestselling author of The Lost City of the Monkey God A grand tour of the human immune system and the secrets of health, by the Pulitzer Prize–winning New York Times journalist A terminal cancer patient rises from the grave. A medical marvel defies HIV. Two women with autoimmunity discover their own bodies have turned against them. Matt Richtel's An Elegant Defense uniquely entwines these intimate stories with science's centuries-long quest to unlock the mysteries of sickness and health, and illuminates the immune system as never before. The immune system is our body's essential defense network, a guardian vigilantly fighting illness, healing wounds, maintaining order and balance, and keeping us alive. Its legion of microscopic foot soldiers—from T cells to "natural killers"—patrols our body, linked by a nearly instantaneous communications grid. It has been honed by evolution over millennia to face an almost infinite array of threats. For all its astonishing complexity, however, the immune system can be easily compromised by fatigue, stress, toxins, advanced age, and poor nutrition—hallmarks of modern life—and even by excessive hygiene. Paradoxically, it is a fragile wonder weapon that can turn on our own bodies with startling results, leading today to epidemic levels of autoimmune disorders. Richtel effortlessly guides readers on a scientific detective tale winding from the Black Plague to twentieth-century breakthroughs in vaccination and antibiotics, to the cutting-edge laboratories that are revolutionizing immunology—perhaps the most extraordinary and consequential medical story of our time. The foundation that Richtel builds makes accessible revelations about cancer immunotherapy, the microbiome, and autoimmune treatments that are changing millions of lives. An Elegant Defense also captures in vivid detail how these powerful therapies, along with our behavior and environment, interact with the immune system, often for the good but always on a razor's edge that can throw this remarkable system out of balance. Drawing on his groundbreaking reporting for the New York Times and based on extensive new interviews with dozens of world-renowned scientists, Matt Richtel has produced a landmark book, equally an investigation into the deepest riddles of survival and a profoundly human tale that is movingly brought to life through the eyes of his four main characters, each of whom illuminates an essential facet of our "elegant defense."

Pandemics-Christian W. McMillen 2016 Machine generated contents note:

-- Introduction -- Chapter 1: Plague -- Chapter 2: Smallpox -- Chapter 3: Malaria -- Chapter 4: Cholera -- Chapter 5: Tuberculosis -- Chapter 6: Influenza -- Chapter 7: HIV/AIDS -- References -- Further Reading -- Index

Beating the Flu-J. E. Williams 2006-07-05 Be Prepared to Beat the Flu Every year, 36,000 Americans die of the flu and one million die worldwide. The possibility of a super flu pandemic is frightening. If no one has immunity, it could cover the globe in 250 days and conceivably infect 20 percent or more of the world's population of 6.6 billion. The 1918 Spanish flu killed 675,000 Americans and at least 50 million worldwide. The death toll from the bird flu virus--with a 50% kill rate in adults and a frightening 89% in children--could reach an apocalyptic 360 million. Worse yet, without a vaccine (or adequate supplies), and without enough antiviral drugs, modern medicine doesn't have a specific, effective, and safe treatment for the flu. This nightmare scenario may not happen, but if it does, it’s essential that individuals and families arm themselves with up-to-date information. Dr. J. E. Williams is an oriental and natural-medicine expert who has used herbs and vitamins to treat influenza and other viruses for more than two decades. In Beating the Flu, he begins not by telling you how to treat the flu bug, but how to avoid it altogether through a combination of good hygiene and super foods that offer the quick boosts your immune system needs to ward off the virus. Should you get sick, Dr. Williams also offers a "natural medicine cabinet” of vitamins, herbs, and minerals that work best against any kind of flu—along with the clinical evidence to back up the remedies. Dr. J. E. Williams has practiced Oriental Medicine for more than two decades and is the author of three books. Presently, he is the academic dean at the East West College of Natural Medicine.

Antibodies for Infectious Diseases-James E. Crowe, Jr. 2015-05-01 State-of-the-art reviews covering major aspects of antibodies and intervention against infectious diseases The connection between antibodies and infectious diseases has spawned entire related fields of study. Antibodies for Infectious Diseases presents perspectives from leading research scientists and summarizes the amazing progress in this area into a single definitive source. Providing a broad survey of the most important aspects of the field of antibodies for infectious diseases, this book presents general features pertaining to structure, function, isotype, and the role of complement in antibody function examines the role of antibodies in antimicrobial immunity with specific targets details new methods for expression of monoclonal antibodies, in plants or by transfer of antibody genes for in vivo expression in treated subjects Antibodies for Infectious Diseases is a comprehensive reference for researchers, pharmaceutical developers, and health care professionals on the status of the development of antibody-based therapies for treating infectious diseases. It is also useful as supplemental reading for upper level life sciences students.

Coronavirus Disease 2019 (COVID-19)-Shailendra K. Saxena 2020-04-29 This book provides a comprehensive overview of recent novel coronavirus (SARS-CoV-2) infection, their biology and associated challenges for their treatment and prevention of novel Coronavirus Disease 2019 (COVID-19). Discussing various aspects of COVID-19 infection, including global epidemiology, genome organization, immunopathogenesis, transmission cycle, diagnosis, treatment, prevention, and control strategies, it highlights host-pathogen interactions, host immune response, and pathogen immune invasion strategies toward developing an immune intervention or preventive vaccine for COVID-19. An understanding of the topics covered in the book is imperative in the context of designing strategies to protect the human race from further losses and harm due to SARS-CoV-2 infection causing COVID-19.

The Pandemic Information Gap-Joshua Gans 2020-11-10 Why solving the information problem should be at the core of our pandemic response: essential reading about the long-term implications of our current crisis. COVID-19 is caused by a virus. The COVID-19 pandemic is caused by a lack of good information. A pandemic is essentially an information problem: this is the enlightening and provocative idea at the heart of this book. If we solve the information problem, argues economist Joshua Gans, we can defeat the virus. For example, when we don't know who is infected, we have to act as if everyone is infected. If we actively manage the information problem--if we know who is infected and with whom they had contact--we can suppress the virus or buy time for vaccine development. This is an expanded version of an eBook originally published as Economics in the Age of COVID-19.

The Innate Immune Response to Infection-Stefan H. E. Kaufmann 2004 Delivers a state-of-the-art review of the innate immune system, utilizing the most current concepts of cellular and molecular biology. The book focuses on evolutionary aspects, describing the major cells, humoral factors, receptors, and effector responses central to innate immunity and its important relation to acquired immunity. In-depth treatment is given to the performance of the innate immune system in various situations, including bacterial, viral, fungal, and parasitic infection.

National Strategy for Pandemic Influenza- 2006

Pandemic-Sonia Shah 2016-02-16 Finalist for the Los Angeles Times Book Prize | A New York Times Editor's Choice “[A] grounded, bracingly intelligent study” —Nature Prizewinning science journalist Sonia Shah presents a startling examination of the pandemics that have ravaged humanity—and shows us how history can prepare us to confront the most serious acute global health emergency of our time. Over the past fifty years, more than three hundred infectious diseases have either emerged or reemerged, appearing in places where they’ve never before been seen. Years before the sudden arrival of COVID-19, ninety percent of epidemiologists predicted that one of them would cause a deadly pandemic sometime in the next two generations. It might be Ebola, avian flu, a drug-resistant superbug, or something completely new, like the novel virus the world is confronting today. While it was impossible to predict the emergence of SARS-CoV-2—and it remains impossible to predict which pathogen will cause the next global outbreak—by unraveling the stories of pandemics past we can begin to better understand our own future, and to prepare for what it holds in store. In Pandemic: Tracking Contagions, from Cholera to Ebola and Beyond, Sonia Shah interweaves history, original reportage, and personal narrative to explore the origins of epidemics, drawing parallels between cholera—one of history’s most deadly and disruptive pandemic-causing pathogens—and the new diseases that stalk humankind today. She tracks each stage of cholera’s dramatic journey, from its emergence in the South Asian hinterlands as a harmless microbe to its rapid dispersal across the nineteenth-century world, all the way to its latest beachhead in Haiti. Along the way she reports on the pathogens now following in cholera’s footsteps, from the MRSA bacterium that besieges her own family to the never-before-seen killers coming out of China’s wet markets, the surgical wards of New Delhi, and the suburban backyards of the East Coast. Delving into the convoluted science, strange politics, and checkered history of one of the world’s deadliest diseases, Pandemic is a work of epidemiological history like no other, with urgent lessons for our own time. “Shah proves a disquieting Virgil, guiding us through the hells ruled by [infectious diseases] . . . the power of Shah's account lies in her ability to track simultaneously the multiple dimensions of the public-health crises we are facing.” —The Chicago Tribune