Agents Of Bioterrorism Pathogens And Their Weaponization

Food SafetySequence-Based Classification of Select AgentsDetection of Chemical, Biological, Radiological and Nuclear Agents for the Prevention of TerrorismAgents of BioterrorismBiohazardMicrobial ForensicsDetection of Bacteria, Viruses, Parasites and FungiResponsible Research with Biological Select Agents and ToxinsHandbook on Biological Warfare PreparednessMicroorganisms and BioterrorismAgents of BioterrorismBioterrorism and BiocrimesEmergency Action for Chemical and Biological Warfare AgentsBiological Threats and TerrorismAgents of BioterrorismBioterrorism and BiocrimesHandbook of Chemical and Biological Warfare AgentsDetection of Biological Agents for the Prevention of BioterrorismHandbook of Chemical and Biological Warfare AgentsBiosensors for Security and Bioterrorism ApplicationsOrigins of Life on the Earth and in the CosmosAntimicrobial Drug ResistanceCountering BioterrorismThe Threat of BioterrorismDecontamination of Warfare AgentsChemical and Biological TerrorismPathogens for WarChemical and Biological WarfareAnimal Models for Assessing Countermeasures to Bioterrorism AgentsA Short History of Biological WarfareBiosecurity and BioterrorismThe increasing threat of biological weaponsGermsMolecular, Clinical and Environmental ToxicologyUsamriid's Medical Management of Biological Casualties HandbookDefence Against BioterrorismThe Gathering Biological Warfare StormMedical Aspects of Biological Warfare, 2eTickborne Infectious DiseasesBiological Toxins and Bioterrorism

Food Safety

The attacks of September 11 and the release of anthrax spores revealed enormous vulnerabilities in the U.S. public-health infrastructure and suggested similar vulnerabilities in the agricultural infrastructure as well. The traditional public health response-surveillance (intelligence), prevention, detection, response, recovery, and attribution-is the paradigm for the national response not only to all forms of terrorism but also to emerging infectious diseases. Thus, investments in research on bioterrorism will have enormous potential for application in the detection, prevention, and treatment of emerging infectious diseases that also are unpredictable and against which we must be prepared. The deciphering of the human genome sequence and the complete elucidation of numerous pathogen genomes, our rapidly increasing understanding of the molecular mechanisms of pathogenesis and of immune responses, and new strategies for designing drugs and vaccines all offer unprecedented opportunities to use science to counter bioterrorist threats. But these same developments also allow science to be misused to create new agents of mass destruction. Hence the effort to confront bioterrorism must be a global one. Countering Bioterrorism makes the following recommendations: Recommendation 1: All agencies with responsibility for homeland security should work together to establish stronger and more meaningful working ties between the intelligence, S&T, and public health communities. Recommendation 2: Federal agencies should work cooperatively and in collaboration with industry to develop and evaluate rapid, sensitive, and specific early-detection technologies. Recommendation 3: Create a global network for detection and surveillance, making use of computerized methods for real-time

reporting and analysis to rapidly detect new patterns of disease locally, nationally, and ultimately- internationally. The use of high-throughput methodologies that are being increasingly utilized in modern biological research should be an important component of this expanded and highly automated surveillance strategy. Recommendation 4: Use knowledge of complex biological patterns and high-throughput laboratory automation to classify and diagnose infections in patients in primary care settings. Recommendation 5: USDA should create an agency for control and prevention of plant disease. This agency should have the capabilities necessary to deal effectively with biothreats.

Sequence-Based Classification of Select Agents

This book is the first to deal exclusively with tickborne infectious diseases in a single source, including comprehensive coverage of babesiosis, ehrlichiosis, relapsing fever, Rocky Mountain spotted fever, and Colorado tick fever, with a special emphasis on Lyme disease. Explains how to obtain reliable and objective laboratory confirmation of clinical impressions! Containing contributions from 24 infectious disease authorities, and supplying over 940 references, tables, drawings, and photographs, Tickborne Infectious Diseases devotes an entire chapter to newly described tick-transmitted infections examines tickborne encephalitis and hemorrhagic fevers discusses optimal microbial therapy and management of bacterial and rickettsial tickborne infections focuses on human monocytotropic and granulocytotropic ehrlichiosis explores ecological, chemical, and biological control of tick populations details the efficacy and use of Lyme vaccines reviews the epidemiology, clinical manifestations, diagnosis, and treatment of Lyme carditis clarifies myths surrounding Lyme neuroborreliosis to separate scientific fact from misperception and misinformation emphasizes differential diagnosis of tickborne diseases Offering a basis for understanding the natural history of vector ticks and the epidemiology of the pathogens they carry, Tickborne Infectious Diseases is a cutting-edge reference for infectious disease specialists; internists; microbiologists; pediatricians; primary care, emergency room, and critical care physicians; and medical residents and students.

Detection of Chemical, Biological, Radiological and Nuclear Agents for the Prevention of Terrorism

Agents of Bioterrorism

Handbook on Biological Warfare Preparedness provides detailed information on biological warfare agents and their mode of transmission and spread. In addition, it explains methods of detection and medical countermeasures, including vaccine and post-exposure therapeutics, with specific sections detailing diseases, their transmission, clinical signs and symptoms, diagnosis, treatment, vaccines, prevention and management. This book is useful reading for researchers and advanced students in toxicology, but it will also prove helpful for medical students, civil administration, medical doctors, first responders and security forces. As the highly unpredictable nature of any event involving biological warfare agents has given rise to the need for the rapid development of accurate detection systems,

this book is a timely resource on the topic. Introduces different bacterial and viral agents, including Ebola and other emerging threats and toxins Discusses medical countermeasures, including vaccines and post-exposure therapeutics Includes a comprehensive review of current methods of detection

Biohazard

This new work offers a clear and thorough account of the threats posed by bioterrorism from the perspective of biologists. The authors examine thirteen disease-causing agents, including those responsible for anthrax, the plague, smallpox, influenza, and SARS. Each chapter considers a particular pathogen from the standpoint of its history, molecular biology, pathology, clinical presentation, diagnosis, weaponization, and defenses. The book also examines strategies for making vaccines and protecting the population in a bioterror attack.

Microbial Forensics

During the past five years, the threat of bioterrorism has become a subject of widespread concern. Journalists, academics, and policy analysts have considered the subject, and in most cases found much to alarm them. Most significantly, it has captured the attention of policy makers at all levels of government in the United States. Unfortunately, bioterrorism remains a poorly understood subject. Many policymakers and policy analysts present apocalyptic visions of the threat, contending that it is only a matter of time before some terrorist uses biological agents to cause mass casualties. In contrast, other analysts argue that the empirical record provides no basis for concern, and thus largely dismiss the potential threat. Neither approach is helpful. Imagining catastrophic threats inevitably leads to a requirement for impossibly large response capabilities. In contrast, denying the potential danger altogether leads to the kind of tunnel vision that led U.S. intelligence officials to totally ignore the emergence of Aum Shinrikyo in Japan, despite its overtly hostile attitude towards the United States. This study takes an intermediate course. It provides empirical evidence to support the views of those who argue that biological agents are difficult to use. It also provides abundant evidence that some people have desired to inflict mass casualties on innocent populations through employment of biological agents. Fortunately, these accounts also suggest that such people lacked the capability to follow through with their plans. The research also casts considerable doubt on our ability to predict which biological agents a perpetrator might employ. While some analysts assume that terrorists will use those agents that proved of most interest to state weapons programs, bioterrorists and biocriminals have acquired and used agents of little or no value as weapons of war.

Detection of Bacteria, Viruses, Parasites and Fungi

Presents a balanced account of the current biological menaces and discusses the defensive countermeasures underway to combat both biological warfare and bioterrorism.

Responsible Research with Biological Select Agents and Toxins

Origins of Life on the Earth and in the Cosmos, Second Edition, suggests answers to the age-old questions of how life arose in the universe and how it might arise elsewhere. This thorough revision of a very successful text describes key events in the evolution of living systems, starting with the creation of an environment suitable for the origins of life. Whereas one may never be able to reconstruct the precise pathway that led to the origin of life on earth, one can certainly make some plausible reconstructions of it. Such discussions have greatly expanded our understanding of the principles of chemical evolution and how they compare and contrast with the principles of biological evolution. The text is strong on biochemistry and its recent applications to origins' research. Provides an excellent review of basic biochemistry an evolution Written in a clear, concise style for scientists, students, and readers interested in a scientific inquiry into the origins of life Written by an authority in the field, and brought fully up-to-date in light of new research Pulls together valuable information not found in a single source Organized and presented in a manner conductive for use in a college course Heavily illustrated to make difficult concepts concrete

Handbook on Biological Warfare Preparedness

Microorganisms and Bioterrorism

This book offers comprehensive coverage of biomarker/biosensor interactions for the rapid detection of weapons of bioterrorism, as well as current research trends and future developments and applications. It will be useful to researchers in this field who are interested in new developments in the early detection of such. The authors have collected very valuable and, in some aspects indispensable experience in the area i.e. in the development and application of portable biosensors for the detection of potential hazards. Most efforts are centered on the development of immunochemical assays including flow-lateral systems and engineered antibodies and their fragments. In addition, new approaches to the detection of enzyme inhibitors, direct enzymatic and microbial detection of metabolites and nutrients are elaborated. Some realized prototypes and concept devices applicable for the further use as a basis for the cooperation programs are also discussed.There is a particular focus on electrochemical and optical detection systems,including those employing carbon nanotubes, quantum dots and metalnanoparticles. The authors are well-known scientists and most of them are editors of respected international scientific journals. Although recently developed biosensors utilize known principles, the biosensing devices described can significantly shorten the time required for successful detection and enhance efforts in more time-consuming directions, e.g. remote sensing systems and validation in real-sample analysis.The authors describe advances in all stages of biosensor development: theselection of biochemical components, their use in biosensor assembly, detection principles and improvements and applications for real sample assays.

Agents of Bioterrorism

Clinical Toxicology is the second volume of a three-volume set on molecular,

clinical and environmental toxicology that offers a comprehensive and in-depth response to the increasing importance and abundance of chemicals of daily life. By providing intriguing insights far down to the molecular level, this three-volume work covers the entire range of modern toxicology with special emphasis on recent developments and achievements. It is written for students and professionals in medicine, science, public health or engineering who are demanding reliable information on toxic or potentially harmful agents and their adverse effects on the human body.

Bioterrorism and Biocrimes

Of late, bioterrorism has been a subject of great concern and some misunderstanding. With these fears and uncertainties in mind, the authors in Agents of Bioterrorism offer a clear and thorough account of the threats posed by bioterrorism and how to prepare for and respond to an attack. The contributors consider thirteen disease-causing agents, including those responsible for anthrax, encephalitis, botulism, ebola, tularemia, salmonella, the plague, smallpox, influenza, and severe acute respiratory syndrome (SARS). Each chapter considers a particular pathogen from the standpoint of its history, molecular biology, pathology, clinical presentation, diagnosis, weaponization, and defenses. Four appendices cover rapid drug discovery, strategies for making vaccines, protection of the population in a bioterror attack, and sources of information on bioterrorism.Scientific advances have resulted in a greater understanding of how pathogens produce their toxins and how they can be used to produce a wide range of bioweapons. These advances have also led to new defenses against disease-causing agents. The contributors demonstrate that by understanding the pathogens used in bioterrorism, scientists can help minimize fear and encourage constructive responses to this threat.

Emergency Action for Chemical and Biological Warfare Agents

Extensively revised and updated, this second edition of the bestselling Handbook of Chemical and Biological Warfare Agents goes well beyond thedirty thirty commonly discussed agents and provides rapid access to a wide range of agents that can be used as weapons. This edition incorporates additional classes of agents, expands existing clas

Biological Threats and Terrorism

A HazMat team evacuates five square miles of a city business district in response to a chemical spill. Ten city blocks away, a police special response team forms a perimeter around an office building where a terrorist threatens the release of a deadly chemical agent. Meanwhile, paramedics administer first aid to victims exposed to a possible vesicant. In the real-life world of emergency response, nothing is more crucial to crisis personnel than quick and decisive action. D. Hank Ellison's Emergency Action for Chemical and Biological Warfare Agents tells police, paramedics, and firefighters just what actions to take in the event of a crisis involving hazardous materials. The book contains abridged versions of the class indices from Ellison's larger Handbook of Chemical and Biological Warfare Agents.

The indices deal with classes of agents (nerve, blister, etc.) instead of focusing on specific agents. Each index contains information on the toxicology/health impacts, physical characteristics, hazards from fire or reactivity, protection of personnel, and general first aid for that agent class. Designed to provide rapid access to critical emergency information at the scene of a release of chemical or biological warfare agents, this handy field guide is also ideal for facilitating the coordination with off-site personnel who have access to more comprehensive information in Ellison's larger Handbook. It differs from its larger companion, however, in that agent specific data, as well as information on evacuation distances, are listed in table format, making it the ideal tool for emergency responders deployed in the field.

Agents of Bioterrorism

This NATO-ASI installment is designed to provide an advanced overview for doctoral and post-doctoral candidates of the state-of-the-art technologies for bio-detection. The main objective of the work aims at providing readers with the latest developments necessary to successfully understand the CBRN Agents and their associated biotechnologies. The core methods focused on are mass spectrometry (including chromatographic and electrophoretic separation) and comparisons to spectroscopic, immunological and molecular analysis of chemical, biological and nuclear agents.

Bioterrorism and Biocrimes

During the past five years, the threat of bioterrorism has become a subject of widespread concern. Journalists, academics, and policy analysts have considered the subject, and in most cases found much to alarm them. Most significantly, it has captured the attention of policy makers at all levels of government in the United States. Unfortunately, bioterrorism remains a poorly understood subject. Many policymakers and policy analysts present apocalyptic visions of the threat, contending that it is only a matter of time before some terrorist uses biological agents to cause mass casualties. In contrast, other analysts argue that the empirical record provides no basis for concern, and thus largely dismiss the potential threat. Neither approach is helpful. Imagining catastrophic threats inevitably leads to a requirement for impossibly large response capabilities. In contrast, denying the potential danger altogether leads to the kind of tunnel vision that led U.S. intelligence officials to totally ignore the emergence of Aum Shinrikyo in Japan, despite its overtly hostile attitude towards the United States. This study takes an intermediate course. It provides empirical evidence to support the views of those who argue that biological agents are difficult to use. It also provides abundant evidence that some people have desired to inflict mass casualties on innocent populations through employment of biological agents. Fortunately, these accounts also suggest that such people lacked the capability to follow through with their plans. The research also casts considerable doubt on our ability to predict which biological agents a perpetrator might employ. While some analysts assume that terrorists will use those agents that proved of most interest to state weapons programs, bioterrorists and biocriminals have acquired and used agents of little or no value as weapons of war.

Handbook of Chemical and Biological Warfare Agents

This ? rst edition of Antimicrobial Drug Resistance grew out of a desire by the editors and authors to have a comprehensive resource of information on antimicrobial drug resistance that encompassed the current information available for bacteria, fungi, protozoa and viruses. We believe that this information will be of value to clinicians, epidemiologists, microbiologists, virologists, parasitologists, public health authorities, medical students and fellows in training. We have endeavored to provide this information in a style which would be accessible to the broad community of persons who are concerned with the impact of drug resistance in our cl- ics and across the broader global communities. Antimicrobial Drug Resistance is divided into Volume 1 which has sections covering a general overview of drug resistance and mechanisms of drug resistance ? rst for classes of drugs and then by individual microbial agents including bacteria, fungi, protozoa and viruses. Volume 2 addresses clinical, epidemiologic and public health aspects of drug resistance along with an overview of the conduct and interpretation of speci? c drug resistance assays. Together, these two volumes offer a comprehensive source of information on drug resistance issues by the experts in each topic.

Detection of Biological Agents for the Prevention of Bioterrorism

Select Agents are defined in regulations through a list of names of particularly dangerous known bacteria, viruses, toxins, and fungi. However, natural variation and intentional genetic modification blur the boundaries of any discrete Select Agent list based on names. Access to technologies that can generate or 'synthesize' any DNA sequence is expanding, making it easier and less expensive for researchers, industry scientists, and amateur users to create organisms without needing to obtain samples of existing stocks or cultures. This has led to growing concerns that these DNA synthesis technologies might be used to synthesize Select Agents, modify such agents by introducing small changes to the genetic sequence, or create entirely new pathogens. Amid these concerns, the National Institutes of Health requested that the Research Council investigate the science and technology needed to replace the current Select Agent list with an oversight system that predicts if a DNA sequence could be used to produce an organism that should be regulated as a Select Agent. A DNA sequence-based system to better define when a pathogen or toxin is subject to Select Agent regulations could be developed. This could be coupled with a 'yellow flag' system that would recognize requests to synthesize suspicious sequences and serve as a reference to anyone with relevant questions, allowing for appropriate follow-up. Sequence-Based Classification of Select Agents finds that replacing the current list of Select Agents with a system that could predict if fragments of DNA sequences could be used to produce novel pathogens with Select Agent characteristics is not feasible. However, it emphasized that for the foreseeable future, any threat from synthetic biology and synthetic genomics is far more likely to come from assembling known Select Agents, or modifications of them, rather than construction of previously unknown agents. Therefore, the book recommends modernizing the regulations to define Select Agents in terms of their gene sequences, not by their names, and

called this 'sequence-based classification.'

Handbook of Chemical and Biological Warfare Agents

In the wake of September 11th and recent anthrax events, our nationâ€™s bioterrorism response capability has become an imminent priority for policymakers, researchers, public health officials, academia, and the private sector. In a three-day workshop, convened by the Institute of Medicineâ€™s Forum on Emerging Infections, experts from each of these communities came together to identify, clarify, and prioritize the next steps that need to be taken in order to prepare and strengthen bioterrorism response capabilities. From the discussions, it became clear that of utmost urgency is the need to cast the issue of a response in an appropriate framework in order to attract the attention of Congress and the public in order to garner sufficient and sustainable support for such initiatives. No matter how the issue is cast, numerous workshop participants agreed that there are many gaps in the public health infrastructure and countermeasure capabilities that must be prioritized and addressed in order to assure a rapid and effective response to another bioterrorist attack.

Biosensors for Security and Bioterrorism Applications

Extensively revised and updated, this second edition of the bestselling Handbook of Chemical and Biological Warfare Agents goes well beyond thedirty thirty commonly discussed agents and provides rapid access to a wide range of agents that can be used as weapons. This edition incorporates additional classes of agents, expands existing clas

Origins of Life on the Earth and in the Cosmos

Food safety is defined as the concept that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use. Most food product recalls and food-related outbreaks are fully considered as food safety failures. Many risk-based food safety standards, e.g., HACCP, BRC, SQF, ISO/FSSC 22000, are designed to prevent such issues from occurring. Any food recall or food-related outbreak may be attributed to the likelihood of a risk assessment, which in some way failed to identify and control the risk. The essence and true nature of food safety hazards are affected by resources of the food facility, e.g., human, work environment, infrastructure, availability and accessibility of food safety information. Thus, food specialists should establish and manage the parameters of the applied food safety systems to achieve the food safety objectives that produce food in compliance with regulatory and statutory requirements. It is important to understand what exactly will make an end product unsafe and ensure that the necessary control measures are in place to prevent it from happening. Understanding the basic food safety concepts can lead to improvement of the current food safety systems and/or standards.

Antimicrobial Drug Resistance

The Transformational Medical Technologies (TMT) has been a unique component of

the U.S. Department of Defense (DoD) medical biodefense efforts since 2006. Its mission is to advance countermeasure research and development in support of the broader goal of the DoD to protect warfighters from emerging infectious diseases and future genetically engineered biological weapons. The TMT, using advanced science and technology approaches, focused on the development of roadspectrum countermeasures that target common host and pathogen pathways or enhance the host's immune response. Many of these pathogens are lethal or cause such debilitating diseases in humans that it is ethically inappropriate to test the efficacy of these countermeasures in human volunteers. In lieu of human participants, these products may be tested in animals and approved for human use under the provisions of the Food and Drug Administration (FDA)'s 2002 Animal Rule. The reliance on animal models for the development and licensure of medical countermeasures against biothreats is challenging for a number of reasons. The ad hoc Committee on Animal Models for Assessing Countermeasures to Bioterrorism Agents prepared a consensus report that would address the challenges stemming from developing and testing medical countermeasures against biothreat agents in animal models. Animal Models for Assessing Countermeasures to Bioterrorism Agents evaluates how well the existing TMT-employed or candidate animal models reflect the pathophysiology, clinical picture, and treatment of human disease as related to the agents of interest. The report addresses the process and/or feasibility of developing new animal models for critical biodefense research, placing emphasis on the need for a robust and expeditious validation process in terms of the FDA's Animal Rule. The report also evaluates alternatives to the use of animal models based on the premise of the Three Rs.

Countering Bioterrorism

This new work offers a clear and thorough account of the threats posed by bioterrorism from the perspective of biologists. The authors examine thirteen disease-causing agents, including those responsible for anthrax, the plague, smallpox, influenza, and SARS. Each chapter considers a particular pathogen from the standpoint of its history, molecular biology, pathology, clinical presentation, diagnosis, weaponization, and defenses. The book also examines strategies for making vaccines and protecting the population in a bioterror attack.

The Threat of Bioterrorism

The effort to understand and combat infectious diseases has, during the centuries, produced many key advances in science and medicine--including the development of vaccines, drugs, and other treatments. A subset of this research is conducted with agents that, like anthrax, not only pose a severe threat to the health of humans, plants, and animals but can also be used for ill-intended purposes. Such agents have been listed by the government as biological select agents and toxins. The 2001 anthrax letter attacks prompted the creation of new regulations aimed at increasing security for research with dangerous pathogens. The outcome of the anthrax letter investigation has raised concern about whether these measures are adequate. Responsible Research with Biological Select Agents and Toxins evaluates both the physical security of select agent laboratories and personnel reliability measures designed to ensure the trustworthiness of those with access to biological select agents and toxins. The book offers a set of guiding principles and

recommended changes to minimize security risk and facilitate the productivity of research. The book recommends fostering a culture of trust and responsibility in the laboratory, engaging the community in oversight of the Select Agent Program, and enhancing the operation of the Select Agent Program.

Decontamination of Warfare Agents

This volume is based on a multidisciplinary approach towards biological and chemical threats that can, and have been previously used in bioterrorism attacks around the globe. Current knowledge and evidence-based principles from the fields of synthetic biology, microbiology, plant biology, chemistry, food science, forensics, tactics, infective medicine, psychology and others are compiled to address numerous aspects and the complexity of bioterrorism attacks. The main focus is on biological threats, especially in the context of synthetic biology and its emerging findings that can be observed as possible threat and tool. The book examines microorganisms and their possible use in forensics, i.e. as possible detection tool that could enable fast and precise detection of possible treats. A number of plant derived components are also discussed as possible agents in bioterrorism attacks, and in relation to infectious disease pathology. Another integral part is food safety, especially in terms of large food supply chains, like airline caterings, institutionalized kitchens etc. Food can be observed as a possible mean of delivery of various agents (biological and chemical) for bioterrorism attacks. Steps on how to recognize specific critical points in a food supply chain, along with proposed corrective activities are discussed. Examples from around the globe, along with the methodological approach on how to differentiate bioterrorism attacks from other epidemics are provided. However, epidemics are also discussed in the context of migrations, with the special emphasis on the current refugee migrations that affect not only Europe, but also the United States. The book will be of interest to experts from various fields of science as well as professionals working in the field. The book encompasses examples and tools developed for easier, more specific, and faster detection of possible bioterrorism treats, along with proposed actions for some aspects of a bioterrorism attack.

Chemical and Biological Terrorism

With the World Health Organization (WHO), the North Atlantic Treaty Organization (NATO), and the U.S. Blue Ribbon panel publishing reports on the emerging risks of biological weaponry in past months, there is a new sense of urgency regarding biological weapons. In August 2016, the United Nations Secretary General Ban Ki Moon told the Security Council that “non-state actors are actively seeking chemical, biological, and nuclear weapons.” This report presents the changing dynamics of the development and use of biological weapons and the preparation against them. The dynamics relate to technological advances in biotechnology and the concomitant attraction to non-state actors to use biological agents as weapons due to their financial appeal and diverse impact. The relative ease with which biological weapons can be produced, and the intent of non-state actors to use biological weapons- based on historical precedent and recent surge in international terrorism- call for a renewed focus on this field and an increased effort to respond to these developments. We provide illustrations of new policy initiatives in a variety of countries and outline the current state of play in the Netherlands,

providing a point of departure to discuss whether the current approach is sufficient to tackle the upcoming issues.

Pathogens for War

Imagine a hot zone in which Ebola is being spliced—using the latest techniques of genetic engineering—with smallpox, the most infectious disease known to man. Now imagine that cocktail is meant for you. For fifty years, while the world stood in terror of a nuclear war, Russian scientists hidden in heavily guarded secret cities refined and stockpiled a new kind of weapon of mass destruction—an invisible weapon that would strike in silence and could not be traced. It would leave hundreds of thousands dead in its wake and would continue to spread devastation long after its release. The scientists were bioweaponeers, working to perfect the tools of a biological Armageddon. They called it their Manhattan Project. It was the deadliest and darkest secret of the cold war. What you are about to read has never before been made public. Ken Alibek began his career as a doctor wanting to save lives and ended up running the Soviet biological weapons program—a secret military empire masquerading as a pharmaceutical company. At its peak, the program employed sixty thousand people at over one hundred facilities. Seven reserve mobilization plants were on permanent standby, ready to produce hundreds of tons of plague, anthrax, smallpox, and Venezuelan equine encephalitis, to name only a few of the toxic agents bred in Soviet labs. Almost every government ministry was implicated, including the Academy of Sciences and the KGB. Biohazard is a terrifying, fast-paced account of tests and leaks, accidents and disasters in the labs, KGB threats and assassinations. The book is full of revelations—evidence of biowarfare programs in Cuba and India, actual deployments at Stalingrad and in Afghanistan, experiments with mood-altering agents, a contingency plan to attack major American cities, and the true story behind the mysterious anthrax outbreak in Sverdlovsk. But beyond these is a twisted world of lies and mirrors, and the riveting parable of the greatest perversion of science in history. No one knows the actual capabilities of biological weapons better than Dr. Alibek. Many of the scientists who worked with him have been lured away from low-paying Russian labs to rogue regimes and terrorist groups around the world. In our lifetime, we will most likely see a terrorist attack using biological weapons on an American city. Biohazard tells us—in chilling detail—what to expect and what we can do. Not since Arthur Koestler’s Darkness at Noon has there been such a book—a report from inside the belly of the beast. Praise for Biohazard “Harrowing . . . richly descriptive . . . [an] absorbing account.”—The New York Times Book Review “Remarkable . . . terrifying revelations . . . [Ken Alibek’s] overall message is ignored at great national peril.”—Newsday “Read and be amazed. . . . An important and fascinating look into a terrifying world of which we were blissfully unaware.”—Robin Cook, author of Contagion

Chemical and Biological Warfare

The purpose of this book is to bring together, in a single volume, the most up-to-date information concerning microbes with potential as bioterrorist weapons. The primary audience includes microbiologists, including bacteriologists, virologists and mycologists, in academia, government laboratories and research institutes at the

forefront of studies concerning microbes which have potential as bioterrorist weapons, public health physicians and researchers and scientists who must be trained to deal with bioterrorist attacks as well as laboratory investigators who must identify and characterize these microorganisms from the environment and from possibly infected patients.

Animal Models for Assessing Countermeasures to Bioterrorism Agents

Supplies basic summary and treatment information quickly for the health care provider on the front lines. Provides concise supplemental reading material to assist in education of biological casualty management. Edge indexed.

A Short History of Biological Warfare

Pathogens for War explores how Canada and its allies have attempted to deal with the threat of germ warfare, one of the most fearful weapons of mass destruction, since the Second World War. In addressing this subject, distinguished historian Donald Avery investigates the relationship between bioweapons, poison gas, and nuclear devices, as well as the connection between bioattacks and natural disease pandemics. Avery emphasizes the crucially important activities of Canadian biodefence scientists – beginning with Nobel Laureate Frederick Banting – at both the national level and through cooperative projects within the framework of an elaborate alliance system. Delving into history through a rich collection of declassified documents, Pathogens for War also devotes several chapters to the contemporary challenges of bioterrorism and disease pandemics from both national and international perspectives. As such, readers will not only learn about Canada’s secret involvement with biological warfare, but will also gain new insights into current debates about the peril of bioweapons – one of today’s greatest threats to world peace.

Biosecurity and Bioterrorism

The threat of biological and chemical terrorism has driven the demand for timely techniques that can quickly detect the agent or agents used in an attack. The detection and/or prevention of these potential security threats provide significant scientific and technical challenges due to the combination of possible agents and modes of delivery available. This book will present a thorough look at the importance and technological challenges of mass spectrometry (MS) for the detection & identification of biological and chemical threats. This new contribution’s general aims are to draw the attention of recognized practitioners, experts and graduate students trying to grasp the latest MS developments in the cutting-edge fields of MS-biodefense technologies for the rapid/early/specific sensitive threat detection of pathogens, viruses, explosives, mycotoxins, chemical agents, and biological markers of xenobiotic chemicals.

The increasing threat of biological weapons

Microbial Forensics, Third Edition, serves as a complete reference on the discipline,

describing the advances, challenges and opportunities that are integral in applying science to help solve future biocrimes. New chapters include: Microbial Source Tracking, Clinical Recognition, Bioinformatics, and Quality Assurance. This book is intended for a wide audience, but will be indispensable to forensic scientists and researchers interested in contributing to the growing field of microbial forensics. Biologists and microbiologists, the legal and judicial system, and the international community involved with Biological Weapons Treaties will also find this volume invaluable. Presents new and expanded content that includes a statistical analysis of forensic data, legal admissibility and standards of evidence Discusses actual cases of forensic bioterrorism Includes contributions from editors and authors who are leading experts in the field, with primary experience in the application of this fast-growing discipline

Germs

Reflecting the critical threat posed by biological warfare and terrorism in a post 9-11 world, Medical Aspects of Biological Warfare, 2e, addresses the weaponization of biological agents, categorizing potential agents as food, waterborne, or agricultural agents or toxins, and discusses their respective epidemiology. Recent advances in biomedical knowledge are presented that include descriptions of individual agents and the illnesses induced. Authors discuss biotoxins and explain methods for early identification for anthrax, plague, smallpox, alphaviruses, and staphylococcal enterotoxins. Case studies and research on successful management practices, treatments, and antidotes are also included. Contains updated and revised material since previous, 2007 edition.(Previous Print Hardcover ISBN: 9780160797316; eBook: 9780160872389) Related products: More published products by The Borden Institute, U.S. Army Medical Department (AMEDD) are here: https://bookstore.gpo.gov/agency/army-medical-department-amedd Arms & Weapons collection is available here: https://bookstore.gpo.gov/catalog/arms-weapons Click here to find resources about Hazardous Materials (HAZMAT & CBRNE). Find more Physician References and Medical Handbooks here: https://bookstore.gpo.gov/catalog/physician-references-medical-handbooks

Molecular, Clinical and Environmental Toxicology

This publication represents the result of the fruitful workshop organised with the aim to attract the attention on the possibility of bio terrorism attack, with the s-port of NATO funds. In the last years the attention was strongly concentrated on the terrorism view similar to “military type attacks:” bomb on the trains, kamikazes, airplanes etc. As consequence many devices studied are directed to prevent these attacks such as the control of the passengers before the flight. For the people terrorism is therefore equivalent to bomb or similar and nobody think that there is also other possible and sophisticated means that can be used by the terrorist. In 1995 Sarin gas in the Tokio subway killed 12 people and affected 5,000 persons. In the USA anthrax was sent by mail to many federal offices. These events and other cases attract the attention on these possible terrorist attacks and the first recommendations for preventing theses events were\elaborated in the United State and in Europe. The possible agents and the modality that can be used for the diffusion are analysed and food and water are considered the principal and more favourable way. The story and the principal decision about this were reported in

the first article of this collection which introduces the concept of bio-terrorism.

Usamriid's Medical Management of Biological Casualties Handbook

The armaments of chemical and biological warfare (CBW) are now widely held not just by nation-states, but by terrorist and criminal enterprises. The weapons themselves are relatively inexpensive and very easy to hide, allowing organizations of just a few dozen people to deploy potentially devastating attacks. While in the twentieth century most arms-control efforts focused, rightly, on nuclear arsenals, in the twenty-first century CBW will almost certainly require just as much attention. This book defines the basics of CBW for the concerned citizen, including non-alarmist scientific descriptions of the weapons and their antidotes, methods of deployment and defensive response, and the likelihood in the current global political climate of additional proliferation.

Defence Against Bioterrorism

The threat of domestic terrorism today looms larger than ever. Bombings at the World Trade Center and Oklahoma City's Federal Building, as well as nerve gas attacks in Japan, have made it tragically obvious that American civilians must be ready for terrorist attacks. What do we need to know to help emergency and medical personnel prepare for these attacks? Chemical and Biological Terrorism identifies the R&D efforts needed to implement recommendations in key areas: pre-incident intelligence, detection and identification of chemical and biological agents, protective clothing and equipment, early recognition that a population has been covertly exposed to a pathogen, mass casualty decontamination and triage, use of vaccines and pharmaceuticals, and the psychological effects of terror. Specific objectives for computer software development are also identified. The book addresses the differences between a biological and chemical attack, the distinct challenges to the military and civilian medical communities, and other broader issues. This book will be of critical interest to anyone involved in civilian preparedness for terrorist attack: planners, administrators, responders, medical professionals, public health and emergency personnel, and technology designers and engineers.

The Gathering Biological Warfare Storm

In the wake of the anthrax letters following the attacks on the World Trade Center, Americans have begun to grapple with two difficult truths: that there is no terrorist threat more horrifying -- and less understood -- than germ warfare, and that it would take very little to mount a devastating attack on American soil. In Germs, three veteran reporters draw on top sources inside and outside the U.S. government to lay bare Washington's secret strategies for combating this deadly threat. Featuring an inside look at how germ warfare has been waged throughout history and what form its future might take (and in whose hands), Germs reads like a gripping detective story told by fascinating key figures: American and Soviet medical specialists who once made germ weapons but now fight their spread, FBI agents who track Islamic radicals, the Iraqis who built Saddam Hussein's secret

arsenal, spies who travel the world collecting lethal microbes, and scientists who see ominous developments on the horizon. With clear scientific explanations and harrowing insights, Germs is a masterfully written -- and timely -- work of investigative journalism.

Medical Aspects of Biological Warfare, 2e

Biosecurity and Bioterrorism is the first book to take a holistic approach to biosecurity with coverage of pathogens, prevention and response methodology. The book is organized into four thematic sections: Part I provides a conceptual understanding of biowarfare, bioterrorism and the laws we have to counteract this; Part II investigates known bioagents and the threat from emerging diseases; Part III focuses on agricultural terrorism and food security; Part IV outlines international, US, and local initiatives for biodefense and biosecurity. Case studies illustrate biodefense against both intentional terrorism and natural outbreaks. The authors bring an extraordinary combination of experience in academia and the clinical world, as well as real-world experience in technical and practical matters, to their writing. They make technical material clear and fascinating for readers with a basic knowledge of biology. Ryan and Glarum address the hazards in the context of vulnerability assessments and the planning strategies government and industry can take to prepare for and respond to such events. * How are these agents used in biowarfare? * How likely are we to face either a natural outbreak or intentional human/animal infection? * How can we prepare for this effectively?

Tickborne Infectious Diseases

This publication gives a history of biological warfare (BW) from the prehistoric period through the present, with a section on the future of BW. The publication relies on works by historians who used primary sources dealing with BW. In-depth definitions of biological agents, biological weapons, and biological warfare (BW) are included, as well as an appendix of further reading on the subject. Related items: Arms & Weapons publications can be found here: https://bookstore.gpo.gov/catalog/arms-weapons Hazardous Materials (HAZMAT & CBRNE) publications can be found here: https://bookstore.gpo.gov/catalog/hazardous-materials-hazmat-cbrne

Biological Toxins and Bioterrorism

Based on results previously restricted for military use and inaccessible to the public, this practice-oriented handbook introduces the use of enzymes for fast and efficient decontamination of B/C weapons in various scenarios, including terrorist attacks. It draws on the internationally recognized technological leadership of the German armed forces, whose anti-B/C technology is among the most advanced worldwide. The text is rounded off with a look at future perspectives.