

THE BIOLOGICAL THREAT REDUCTION PROGRAM OF THE DEPARTMENT OF DEFENSE

Global Security Engagement|x|The government's first Cooperative Threat Reduction (CTR) programs were created in 1991 to eliminate the former Soviet Union's nuclear, chemical, and other weapons and prevent their proliferation. The programs have accomplished a great deal: deactivating thousands of nuclear warheads, neutralizing chemical weapons, converting weapons facilities for peaceful use, and redirecting the work of former weapons scientists and engineers, among other efforts. Originally designed to deal with immediate post-Cold War challenges, the programs must be expanded to other regions and fundamentally redesigned as an active tool of foreign policy that can address contemporary threats from groups that are agile, networked, and adaptable. As requested by Congress, Global Security Engagement proposes how this goal can best be achieved. To meet the magnitude of new security challenges, particularly at the nexus of weapons of mass destruction and terrorism, Global Security Engagement recommends a new, more flexible, and responsive model that will draw on a broader range of partners than current programs have. The White House, working across the Executive Branch and with Congress, must lead this effort. Global Security Engagement|x|The Cooperative Threat Reduction (CTR) Program was created in 1991 as a set of support activities assisting the Former Soviet Union states in securing and eliminating strategic nuclear weapons and the materials used to create them. The Program evolved as needs and opportunities changed: Efforts to address biological and chemical threats were added, as was a program aimed at preventing cross-border smuggling of weapons of mass destruction. CTR has traveled through uncharted territory since its inception, and both the United States and its partners have taken bold steps resulting in progress unimagined in initial years. Over the years, much of the debate about CTR on Capitol Hill has concerned the effective use of funds, when the partners would take full responsibility for the efforts, and how progress, impact, and effectiveness should be measured. Directed by Congress, the Secretary of Defense completed a report describing DoD's metrics for the CTR Program (here called the DoD Metrics Report) in September 2010 and, as required in the same law, contracted with the National Academy of Sciences to review the metrics DoD developed and identify possible additional or alternative metrics, if necessary. Improving Metrics for the DoD Cooperative Threat Reduction Program provides that review and advice. Improving Metrics for the DoD Cooperative Threat Reduction Program identifies shortcomings in the DoD Metrics Report and provides recommendations to enhance DoD's development and use of metrics for the CTR Program. The committee wrote this report with two main audiences in mind: Those who are mostly concerned with the overall assessment and advice, and those readers directly involved in the CTR Program, who need the details of the DoD report assessment and of how to implement the approach that the committee recommends. Improving Metrics for the Department of Defense Cooperative Threat Reduction Program|x|The United States uses a number of policy tools to address the threat of attack using chemical, biological, radiological and nuclear (CBRN) weapons. These include a set of financial and technical programs known, variously, as cooperative threat reduction (CTR) programs, nonproliferation assistance, or, global security engagement. Congress has supported these programs over the years, but has raised a number of questions about their implementation and their future direction. Over the years, the CTR effort shifted from an emergency response to impending chaos in the Soviet Union to a broader program seeking to keep CBRN weapons away from rogue nations or terrorist groups. It has also grown from a DOD-centered effort to include projects funded by the Department of Defense (DOD), the State Department, the Department of Energy (DOE), and the Department of Homeland Security (DHS). This book summarizes cooperative activities conducted during the full 20 years of U.S. threat reduction and nonproliferation assistance. It also provides basic information on the Global Security Contingency Fund (GSCF) legislation. Cooperative Threat Reduction|x|The United

States uses a number of policy tools to address the threat of attack using chemical, biological, radiological and nuclear (CBRN) weapons. These include a set of financial and technical programs known, variously, as cooperative threat reduction (CTR) programs, nonproliferation assistance, or, global security engagement. Congress has supported these programs over the years, but has raised a number of questions about their implementation and their future direction. The Evolution of Cooperative Threat Reduction|x|The National Academies of Sciences, Engineering, and Medicine was asked to articulate a 5-year strategic vision for international health security programs and provide findings and recommendations on how to optimize the impact of the Department of Defense (DOD) Biological Threat Reduction Program (BTRP) in fulfilling its biosafety and biosecurity mission. Because BTRP is just one of several U.S. government programs conducting international health security engagement, both the strategic vision and the success of the program rely on coordinating actions with the U.S. government as a whole and with its international partners. This report provides several recommendations for optimizing BTRP success in its current mission and the wider-looking strategic vision it proposes. A Strategic Vision for Biological Threat Reduction|x|The government's first Cooperative Threat Reduction (CTR) programs were created in 1991 to eliminate the former Soviet Union's nuclear, chemical, and other weapons and prevent their proliferation. The programs have accomplished a great deal: deactivating thousands of nuclear warheads, neutralizing chemical weapons, converting weapons facilities for peaceful use, and redirecting the work of former weapons scientists and engineers, among other efforts. Originally designed to deal with immediate post-Cold War challenges, the programs must be expanded to other regions and fundamentally redesigned as an active tool of foreign policy that can address contemporary threats from groups that are that are agile, networked, and adaptable. As requested by Congress, Global Security Engagement proposes how this goal can best be achieved. To meet the magnitude of new security challenges, particularly at the nexus of weapons of mass destruction and terrorism, Global Security Engagement recommends a new, more flexible, and responsive model that will draw on a broader range of partners than current programs have. The White House, working across the Executive Branch and with Congress, must lead this effort. Global Security Engagement|x|Worldwide political changes have presented a unique opportunity for forging a new basis of international security relations. The end of the cold war, the dissolution of the Soviet Union, and the ascending role of the United Nations in regional security affairs have transformed the driving issues of international security. These changes both heighten the demand and offer the potential for global cooperation on an unprecedented scale. Traditional security preoccupations and the foundations of past strategy—based on preparation for massive military confrontation—are no longer appropriate. Now world leaders must find alternative strategies to ensure international safety. This book brings together a prominent group of experts, including several recently appointed government officials, to examine an alternative form of security, one that emphasizes collaborative rather than confrontational relationships among national military establishment. Global Engagement offers a complete analysis of the concept of cooperative security, which seeks to establish international agreements to regulate the size, technical composition, investment patterns, and operational practices of all military forces for mutual benefit. It explains how cooperative security also aims to create mechanisms to prevent the proliferation of weapons of mass destruction and regional conflict. The contributors identify the trends motivating the movement toward cooperative security and analyze the implications for practical policy action. They examine the problem of controlling advanced conventional munitions, analyze an integrated control arraignment, discuss international principles of equity and their relationship to problems of security, and offer regional political perspectives while considering social regional security problems. With the altered security environment, cooperation has clearly become the new strategic imperative. Policymakers are challenged to dispose of large arsenals of conventional and nuclear weapons and redirect their efforts to support preventative management of security conditions. Leading the discussion of the security challenges ahead, the authors of this volume debate the utility of cooperative engagement for future strategy. Global Engagement|x|Biological engagement programs are a set of projects or activities between partner countries that strengthen global health security to achieve mutually beneficial outcomes. Engagement programs are an effective way to work collaboratively towards a common threat reduction goal, usually with a strong focus on strengthening health systems and making the world a safer place. Cooperative programs are built upon trust and sharing of information and resources to increase the capacity and capabilities of partner countries. Biological engagement programs reduce the threat of infectious

disease with a focus on pathogens of security concern, such as those pathogens identified by the U.S. Government as Biological Select Agent and Toxins. These programs seek to develop technical or scientific relationships between countries to combat infectious diseases both in humans and animals. Through laboratory biorisk management, diagnostics, pathogen detection, biosurveillance and countermeasure development for infectious diseases, deep relationships are fostered between countries. Biological engagement programs are designed to address dual-use issues in pathogen research by promoting responsible science methodologies and cultures. Scientific collaboration is a core mechanism for engagement programs are designed to strengthen global health security, including prevention of avoidable epidemics; detection of threats as early as possible; and rapid and effective outbreak response. This Research Topic discusses Biological Engagement Programs, highlighting the successes and challenges of these cooperative programs. Articles in this topic outlined established engagement programs as well as described what has been learned from historical cooperative engagement programs not focused on infectious diseases. Articles in this topic highlighted selected research, trainings, and programs in Biological Engagement Programs from around the world. This Topic eBook first delves into Policies and Lessons Learned; then describes Initiatives in Biosafety & Biosecurity; the core of this work documents Cooperative Research Results from the field; then lastly the Topic lays out potential Future Directions to the continued success of the World's cooperative science in reducing the threat of infectious diseases. Biological Engagement Programs: Reducing Threats and Strengthening Global Health Security Through Scientific Collaboration|x|The National Academies of Sciences, Engineering, and Medicine was asked to articulate a 5-year strategic vision for international health security programs and provide findings and recommendations on how to optimize the impact of the Department of Defense (DOD) Biological Threat Reduction Program (BTRP) in fulfilling its biosafety and biosecurity mission. Because BTRP is just one of several U.S. government programs conducting international health security engagement, both the strategic vision and the success of the program rely on coordinating actions with the U.S. government as a whole and with its international partners. This report provides several recommendations for optimizing BTRP success in its current mission and the wider-looking strategic vision it proposes. 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Improving Metrics for the Department of Defense Cooperative Threat Reduction Program|x|In 2002 the Group of Eight industrialized nations - in which Canada, France, Germany, Italy, Japan, Russia, the UK, the USA and representatives of the European Union participate - formed the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction. The G8 pledged to raise up to \$20 billion to carry out the Global Partnership projects over a 10-year period, initially in Russia but with the intention to expand the scope of projects to include other countries. These projects will help to specify the quantities and locations of weapons and materials and ensure that stocks are held under safe and secure custody to prevent diversion to unauthorized users or inappropriate uses. If the weapons or materials are not required, this practical assistance can also help to

eliminate the surplus. The G8 initiative is only one of a number of activities sharing the same basic features: tailor-made measures jointly implemented on the territory of one state by a coalition including states, international organizations, local and regional governments, non-governmental organizations and the private sector. This report reviews the current cooperative threat reduction activities with a particular focus on projects and approaches engaging European partners. It examines the organizing principles for cooperative threat reduction and the lessons learned from past project implementation. Finally, it examines how European countries might organize their cooperative threat reduction activities to increase their coherence and effectiveness.

Reducing Threats at the Source|x|Doctoral Thesis / Dissertation from the year 2018 in the subject Politics - International Politics - Topic: Peace and Conflict Studies, Security, grade: A, (Atlantic International University), course: Doctor of International Relations with a major in International Security, language: English, abstract: This paper is an attempt to deconstruct the concept of security which has been by tradition exclusively confined to the military realm. We make evident that security takes into consideration a number of fields and that its major concern is the human person. In addressing security in this work, we do not only refer to the security of states – the concept of national security –, but also to that of individuals – human security –. Governments should integrate in their security agendas not only their own security, but also the security of their nationals. Accordingly, this implies that they should protect their citizens against any threat to human life. In other words, governments or the people they rule do not merely face military threats from other states; they are as well endangered by other threats to their security, these threats are debated in this research paper. We do not mean that military issues are not to be conceptualized within security frameworks, but we do contend that they are not the unique issues to be securitized. Indeed, this paper displays that other issues should be securitized.

Cooperative Security in the Post Cold-war International System|x|At the moment, the revision of security policy and the formation of a new consensus to support it are still at an early stage of development. The idea of comprehensive security cooperation among the major military establishments to form an inclusive international security arrangement has been only barely acknowledged and is only partially developed. The basic principle of cooperation has been proclaimed in general terms in the Paris Charter issued in November of 1990. Important implementing provisions have been embodied in the Strategic Arms Reductions Talks (START), Conventional Forces in Europe (CFE), and Intermediate-Range Nuclear Forces (INF) treaties. Except for the regulation of U.S. and Commonwealth of Independent States (CIS) strategic forces, however, these arrangements apply only to the European theater and even there have not been systematically developed. The formation of a new security order requires that cooperative theaters of military engagement be systematically developed. Clearly that exercise will stretch the minds of all those whose thinking about security has been premised on confrontational methods. Nonetheless, such a stretching is unavoidable. The new security problems are driven by powerful forces, reshaping the entire international context. They impose starkly different requirements. They will deflect even the impressive momentum of U.S. military traditions. The eventual outcome is uncertain. It turns upon political debates yet to be held, consensus judgements yet to form, and events and their implications yet to unfold. Fundamental reconceptualization of security policy is a necessary step in the right direction, and it is important to get on with it. Getting on with it means defining the new concept of cooperative security, identifying the trends that motivate it, outlining its implications for practical policy action, and acknowledging its constraints. These tasks are the purpose of this essay.

Global Security, the Number One Dilemma of the World Community: the Case of the United States|x|This Congressionally-mandated report identifies areas for further cooperation with Russia and other states of the former Soviet Union under the Cooperative Threat Reduction (CTR) program of the Department of Defense in the specific area of prevention of proliferation of biological weapons. The report reviews relevant U.S. government programs, and particularly the CTR program, and identifies approaches for overcoming obstacles to cooperation and for increasing the long-term impact of the program. It recommends strong support for continuation of the CTR program. A New Concept of Cooperative Security|x|Until Russia and the United States experience a change on government in 2008, the prospects for additional strategic arms control agreements, limits on destabilizing military operations, and joint ballistic missile defense programs appear unlikely. Yet, near-term opportunities for collaboration in the areas of cooperative threat reduction, third-party proliferation, and bilateral military engagement do exist. The Biological Threat Reduction Program of the Department of Defense|x|Non-state threats and actors have become key topics in contemporary international security as since the end of the Cold

War the notion that state is the primary unit of interest in international security has increasingly been challenged. Statistics show that today many more people are killed by ethnic conflicts, HIV/AIDS or the proliferation of small arms than by international war. Moreover, non-state actors, such as non-governmental organizations, private military companies and international regimes, are progressively complementing or even replacing states in the provision of security. Suggesting that such developments can be understood as part of a shift from government to governance in international security, this book examines both how private actors have become one of the main sources of insecurity in the contemporary world and how non-state actors play a growing role in combating these threats. Russian-American Security Cooperation After St. Petersburg

In 2008, the iconic doomsday clock of the Bulletin of the Atomic Scientists was set at five minutes to midnight—two minutes closer to Armageddon than in 1962, when John F. Kennedy and Nikita Khrushchev went eyeball to eyeball over missiles in Cuba! We still live in an echo chamber of fear, after eight years in which the Bush administration and its harshest critics reinforced each other's worst fears about the Bomb. And yet, there have been no mushroom clouds or acts of nuclear terrorism since the Soviet Union dissolved, let alone since 9/11. Our worst fears still could be realized at any time, but Michael Krepon argues that the United States has never possessed more tools and capacity to reduce nuclear dangers than it does today - from containment and deterrence to diplomacy, military strength, and arms control. The bloated nuclear arsenals of the Cold War years have been greatly reduced, nuclear weapon testing has almost ended, and all but eight countries have pledged not to acquire the Bomb. Major powers have less use for the Bomb than at any time in the past. Thus, despite wars, crises, and Murphy's Law, the dark shadows cast by nuclear weapons can continue to recede. Krepon believes that positive trends can continue, even in the face of the twin threats of nuclear terrorism and proliferation that have been exacerbated by the Bush administration's pursuit of a war of choice in Iraq based on false assumptions. Krepon advocates a "back to basics" approach to reducing nuclear dangers, reversing the Bush administration's denigration of diplomacy, deterrence, containment, and arms control. As he sees it, "The United States has stumbled before, but America has also made it through hard times and rebounded. With wisdom, persistence, and luck, another dark passage can be successfully navigated." *New Threats and New Actors in International Security*

Globalization and technology have created new challenges to national governments. As a result, they now must share power with other entities, such as regional and global organizations or large private economic units. In addition, citizens in most parts of the world have been empowered by the ability to acquire and disseminate information instantly. However this has not led to the type of international cooperation essential to deal with existential threats. Whether governments can find ways to cooperate in the face of looming threats to the survival of human society and our environment has become one of the defining issues of our age. A struggle between renewed nationalism and the rise of a truly global society is underway, but neither global nor regional institutions have acquired the skills and authority needed to meet existential threats, such as nuclear proliferation. Arms control efforts may have reduced the excesses of the Cold War, but concepts and methodologies for dealing with the nuclear menace have not kept up with global change. In addition, governments have shown surprisingly little interest in finding new ways to manage or eliminate global and regional competition in acquiring more or better nuclear weapons systems. This book explains why nuclear weapons still present existential dangers to humanity and why engagement by the United States with all states possessing nuclear weapons remains necessary to forestall a global catastrophe. The terms of engagement, however, will have to be different than during the Cold War. Technology is developing rapidly, greatly empowering individuals, groups, and nations. This can and should be a positive development, improving health, welfare, and quality of life for all, but it can also be used for enormous destruction. This book reaches beyond the military issues of arms control to analyze the impact on international security of changes in the international system and defines a unique cooperative security agenda. *Better Safe Than Sorry*

Marshall Center Paper #3 provides two views on Cooperative Security. Richard Cohen presents a compelling and highly original Cooperative Security model. Michael Mihalka broadens the analysis and traces its history. These contrasting essays explore the prospects for a new era of international relations, characterized by reassurance instead of deterrence, cooperation as opposed to confrontation, and mutual benefit in place of unilateral advantage. *Approaching the Nuclear Tipping Point*

"The protection of nuclear material and facilities involves a broad range of activities at the international level as well as in individual countries. International law recognizes that each state has responsibility for implementing these measures and

for providing adequate protection for the material in its possession. At the same time, the international community has established a set of arrangements that help to create and maintain the nuclear security regime. This study presents an overview of the elements of the international nuclear security regime and discusses proposals to strengthen its accountability arrangements, as well as the challenges of expanding the scope of the regime and creating a framework for global nuclear security efforts.

--P. [4] of cover. Cooperative Security

In response to a request from the U.S. Congress, this book examines how the unique experience and extensive capabilities of the Department of Defense (DOD) can be extended to reduce the threat of bioterrorism within developing countries outside the former Soviet Union (FSU). During the past 12 years, DOD has invested \$800 million in reducing the risk from bioterrorism with roots in the states of the FSU. The program's accomplishments are many fold. The risk of bioterrorism in other countries is too great for DOD not to be among the leaders in addressing threats beyond the FSU. Taking into account possible sensitivities about a U.S. military presence, DOD should engage interested governments in about ten developing countries outside the FSU in biological threat reduction programs during the next five years. Whenever possible, DOD should partner with other organizations that have well established humanitarian reputations in the countries of interest. For example, the U.S. Agency for International Development, the Centers for Disease Control and Prevention, and the World Health Organization should be considered as potential partners. Global Nuclear Security

This volume offers a complete analysis of the concept and implications of cooperative security and also identifies the trends motivating this global movement. Countering Biological Threats

Until Russia and the United States experience a change on government in 2008, the prospects for additional strategic arms control agreements, limits on destabilizing military operations, and joint ballistic missile defense programs appear unlikely. Yet, near-term opportunities for collaboration in the areas of cooperative threat reduction, third-party proliferation, and bilateral military engagement do exist. Global Engagement

The Globalization of Security is an important rethinking of the connections between globalization and security, focusing on a conceptual examination of the role of the state combined with key case studies. The book provides an analysis of the changing nature of security issues through three interlinking ways of conceptualizing the globalization of security: the expansion of the scope of threat, thinking about security in "global" terms, and the development of transnational networks of power. Three cases are examined to provide potential examples of the globalization of security: nuclear weapons and the globalization of threat, the globalization of the arms industry, and the global security aspects of migration and citizenship. The book provides a novel historical sociological approach to the globalization of security, advancing both the understanding of security and the theory of state power in international relations. Russian-American Security Cooperation After St. Petersburg

The Cooperative Biological Engagement Program (CBEP) is the biological threat component of the Cooperative Threat Reduction program. It grew out of efforts to address risks associated with legacy biological agents, related materials, and technical expertise developed as part of the biological weapon program in the former Soviet Union. CBEP now partners with about 20 countries in different regions around the world and works with them to address diverse threats to international security, including terrorist organizations seeking to acquire pathogens of security concern; human, animal, and agricultural facilities operating with inadequate safety and security safeguards; and the spread of diseases with potential security or economic consequences. As the program has evolved since its inception two decades ago, so too have its content and approaches to performance measurement. The objective of the research reported here was to build on existing work to develop a comprehensive evaluation framework and recommend metrics for assessing and communicating progress toward CBEP's goals. The report ultimately recommends a number of qualitative and quantitative indicators of CBEP performance, some that can be implemented immediately, some to be implemented later. The Globalization of Security

"The ongoing COVID-19 pandemic marks the most significant, singular global disruption since World War II, with health, economic, political, and security implications that will ripple for years to come." -Global Trends 2040 (2021) Global Trends 2040-A More Contested World (2021), released by the US National Intelligence Council, is the latest report in its series of reports starting in 1997 about megatrends and the world's future. This report, strongly influenced by the COVID-19 pandemic, paints a bleak picture of the future and describes a contested, fragmented and turbulent world. It specifically discusses the four main trends that will shape tomorrow's world: - Demographics-by 2040, 1.4 billion people will be added mostly in Africa and South Asia. - Economics-increased government debt and concentrated economic

power will escalate problems for the poor and middleclass. - Climate-a hotter world will increase water, food, and health insecurity. - Technology-the emergence of new technologies could both solve and cause problems for human life. Students of trends, policymakers, entrepreneurs, academics, journalists and anyone eager for a glimpse into the next decades, will find this report, with colored graphs, essential reading. Nominations Before the Senate Armed Services Committee, Second Session, 111th Congress|x|This report describes a project to develop a comprehensive evaluation framework for the Cooperative Biological Engagement Program and recommends metrics for assessing and communicating progress toward the program's goals. Measuring Cooperative Biological Engagement Program (CBEP) Performance|x|This is a thoroughly revised second edition of a book that we published in 2010. Exporting Security is about the US military's role in military-to-military partnerships, such as helping to support and train foreign militaries, and about the US military's role in missions other than war, ranging from diplomacy, to development, to humanitarian assistance after disasters or during epidemics. Reveron is a proponent of these non-warfighting missions because he views them as an economical way to promote human security and regional security in trouble spots, which he says is in the US national interest. He also sees these efforts as making it less likely that the US will feel compelled to intervene directly in hot spots around the globe if our partners can maintain their own security or if humanitarian disasters can be averted. This second edition will take into account the Obama administration's foreign policy, the poor legacy of training the Iraqi army, the implications of more assertive foreign policies by Russia and China, and the US military's role in recent humanitarian crises such as the Ebola epidemic in West Africa-- Global Trends 2040|x|This book develops the idea that since decolonisation, regional patterns of security have become more prominent in international politics. The authors combine an operational theory of regional security with an empirical application across the whole of the international system. Individual chapters cover Africa, the Balkans, CIS Europe, East Asia, EU Europe, the Middle East, North America, South America, and South Asia. The main focus is on the post-Cold War period, but the history of each regional security complex is traced back to its beginnings. By relating the regional dynamics of security to current debates about the global power structure, the authors unfold a distinctive interpretation of post-Cold War international security, avoiding both the extreme oversimplifications of the unipolar view, and the extreme deterritorialisations of many globalist visions of a new world disorder. Their framework brings out the radical diversity of security dynamics in different parts of the world. Journal of the American Veterinary Medical Association|x|The Nuclear Non-Proliferation Treaty has long been key in non-proliferation and disarmament activities. The Treaty is the major international legal obstacle for states seeking nuclear weapon capabilities. In retrospect, and despite setbacks, the overall impact of the Nuclear Non-Proliferation Treaty has been significant and gratifying. Its continued success is by no means guaranteed. As old nuclear dangers persist and new ones evolve, policies to halt nuclear proliferation are more disparate than at any other time. Nuclear weapons remain an essential part of the security policies of leading states and many developmental states maintain strong nuclear weapon ambitions, while terrorists have actively been seeking nuclear capabilities. In search of an overarching strategy that recognizes both the flaws of the existing non-proliferation regime, and the value of some of the corrections proposed by regime critics, this volume assesses contemporary efforts to stem nuclear proliferation. In doing so, Nuclear Proliferation and International Security examines a number of cases with a view to recommending better non-proliferation tools and strategies. The contributors comprise renowned international scholars, who have been selected to obtain the best possible analyses of critically important issues related to international non-proliferation dynamics and the future integrity of the Non-Proliferation Treaty. Nominations Before the Senate Armed Services Committee, First Session, One Hundred Twelfth Congress|x|The interwoven futures of humanity and our planet are under threat. Urgent action, taken together, is needed to change course and reimagine our futures. Measuring Cooperative Biological Engagement Program (CBEP) Performance|x|In July 2005, the National Academies released the report Biological Science and Biotechnology in Russia: Controlling Diseases and Enhancing Security. The report offered a number of recommendations that could help restore Russia's ability to join with the United States and the broader international community in leading an expanded global effort to control infectious diseases. A proposed bilateral intergovernmental commission could play a pivotal role toward that end as cooperation moves from assistance to partnership. The report proposed the establishment of two model State Sanitary Epidemiological Surveillance Centers in Russia, more focused support of competitively selected Russian

research groups as centers of excellence, the promotion of investments in biotechnology niches that are well suited for Russian companies, and expanded opportunities for young scientists to achieve scientific leadership positions in Russia. Also, the report highlighted the importance of U.S. programs that support the integration of former Soviet defense scientists with civilian researchers who had not been involved in military-related activities. Exporting Security

During July 10-13, 2011, 68 participants from 32 countries gathered in Istanbul, Turkey for a workshop organized by the United States National Research Council on Anticipating Biosecurity Challenges of the Global Expansion of High-containment Biological Laboratories. The United States Department of State's Biosecurity Engagement Program sponsored the workshop, which was held in partnership with the Turkish Academy of Sciences. The international workshop examined biosafety and biosecurity issues related to the design, construction, maintenance, and operation of high-containment biological laboratories- equivalent to United States Centers for Disease Control and Prevention biological safety level 3 or 4 labs. Although these laboratories are needed to characterize highly dangerous human and animal pathogens, assist in disease surveillance, and produce vaccines, they are complex systems with inherent risks. Biosecurity Challenges of the Global Expansion of High-Containment Biological Laboratories summarizes the workshop discussion, which included the following topics: Technological options to meet diagnostic, research, and other goals; Laboratory construction and commissioning; Operational maintenance to provide sustainable capabilities, safety, and security; and Measures for encouraging a culture of responsible conduct. Workshop attendees described the history and current challenges they face in their individual laboratories. Speakers recounted steps they were taking to improve safety and security, from running training programs to implementing a variety of personnel reliability measures. Many also spoke about physical security, access controls, and monitoring pathogen inventories. Workshop participants also identified tensions in the field and suggested possible areas for action. Regions and Powers

The Center for Global Security Research (CGSR) was founded in 1994 to serve as a bridge between the technical and policy communities. Its core mission is to ensure that each community has some understanding of the perspectives and priorities of the other. In its first decade, the Center focused heavily on defining the realm of the necessary and possible for cooperative threat reduction with the post-Soviet states. In its second decade, the Center's interests expanded to include proliferation and nonproliferation. In 2015, it set out on a new course. In order to come to terms with a changed and changing security environment, it re-focused on the new issues of deterrence, assurance, and strategic stability. This change followed in part from the conviction of Lawrence Livermore National Laboratory leadership that the Laboratory needed to do more to strengthen "the bridge" on these topics. In 2015 we framed a new analytical approach built around five thrust areas: 1. Major Power Rivalry and Deterrence 2. Regional Challengers and Challenges 3. Toward Integrated Strategic Deterrence 4. The Future of Cooperative Measures to Reduce Nuclear/Strategic Dangers 5. The Future of Long-Term Competitive Strategies In each area, we then sketched out some high-level framing questions. Over the following five years, CGSR convened 45 two-day workshops and hosted 116 speakers. It issued 20 major publications and scores of research surveys and workshop summaries. It has built a student program and put more than 100 research associates to work. It has kept stakeholders involved in defining and executing its program of work. It also expanded its mission to put a new focus on encouraging the development of emerging communities of interest. This report summarizes key insights gained over this five-year period. It is comprehensive in approach. But it is not exhaustive. Instead, this report attempts to provide a coherent set of answers to the high-level framing question, as derived from that work. These should be thought of as initial hypotheses, subject to further inquiry and analysis. The report backs these up with a select discussion of aspects of our work bearing on those answers. Responding to War, Terrorism, and WMD Proliferation

Nuclear Proliferation and International Security

Reimagining our futures together

Biological Science and Biotechnology in Russia

Biosecurity Challenges of the Global Expansion of High-Containment Biological Laboratories

Toward New Thinking about Our Changed and Changing World

\$ From Foreign Assistance to Sustainable Partnerships. The Biological Threat Reduction Program of the Department of Defense. Improving Metrics for the Department of Defense Cooperative Threat Reduction Program. . Defense Threat Reduction and Treaty Compliance Agency FY 1999, Amended Budget Estimates.

Program Document, Research, Development, Test and Evaluation, Defense-Wide (Supports Congressional Amended Budget Estimates) (White Book).. . A Blueprint for U.S.-Russian Cooperation, A Report to the Cooperative Threat Reduction Program of the U.S. Department of Defense. Controlling Dangerous Pathogens. Science Translational Medicine. Sci. Transl. Med.. A conserved transcriptional response to intranasal Ebola virus exposure in nonhuman primates prior to onset of fever.

An animal model of Ebola virus infection with variable disease onset identifies host markers of infection that precede symptoms by 4 days.

. Pervasive and Mobile Computing. Pervasive and Mobile Computing. Physiological state in extreme environments. A Blueprint for U.S.-Russian Cooperation, A Report to the Cooperative Threat Reduction Program of the U.S. Department of Defense: Russian Version. Controlling Dangerous Pathogens. Analytical Biochemistry. Analytical Biochemistry. Metal stopping reagents facilitate discontinuous activity assays of the de novo purine biosynthesis enzyme PurE. A Review of the Dose Reconstruction Program of the Defense Threat Reduction Agency. Scientific Reports. Sci Rep. Microbial Diversity in Bushmeat Samples Recovered from the Serengeti Ecosystem in Tanzania.

Bushmeat, the meat and organs derived from wildlife species, is a common source of animal protein in the diets of those living in sub-Saharan Africa and is frequently associated with zoonotic spillover of dangerous pathogens. Given the frequent consumption of bushmeat in this region and the lack of knowledge about the microbial communities associated with this meat, the microbiome of 56 fresh and processed bushmeat samples ascertained from three districts in the Western Serengeti ecosystem in Tanzania was characterized using 16S rRNA metagenomic sequencing. The results show that the most abundant phyla present in bushmeat samples include Firmicutes (67.8%), Proteobacteria (18.4%), Cyanobacteria (8.9%), and Bacteroidetes (3.1%). Regardless of wildlife species, sample condition, season, or region, the microbiome is diverse across all samples, with no significant difference in alpha or beta diversity. The findings also suggest the presence of DNA signatures of potentially dangerous zoonotic pathogens, including those from the genus *Bacillus*, *Brucella*, *Coxiella*, and others, in bushmeat. Together, this investigation provides a better understanding of the microbiome associated with this major food source in samples collected from the Western Serengeti in Tanzania and highlights a need for future investigations on the potential health risks associated with the harvesting, trade, and consumption of bushmeat in Sub-Saharan Africa.

. Microbiology. Superoxide dismutase C is required for intracellular survival and virulence of *Burkholderia pseudomallei*.

Burkholderia pseudomallei is an intracellular pathogen and the causative agent of melioidosis, a life-threatening disease of humans. Within host cells, superoxide is an important mediator of pathogen killing. In this study, we have identified the *B. pseudomallei* K96243 *sodC* gene, shown that it has superoxide dismutase activity, and constructed an allelic deletion mutant of this gene. Compared with the wild-type, the mutant was more sensitive to killing by extracellular superoxide, but not to superoxide generated intracellularly. The *sodC* mutant showed a markedly decreased survival in J774A.1 mouse macrophages, and reduced numbers of bacteria were recovered from human polymorphonuclear neutrophils (PMNs) when compared with the wild-type. The numbers of wild-type or mutant bacteria recovered from human diabetic neutrophils were significantly lower than from normal human neutrophils. The *sodC* mutant was attenuated in BALB/c mice. Our results indicate that SodC plays a key role in the virulence of *B. pseudomallei*, but that diabetics are not more susceptible to infection because of a reduced ability of PMNs to kill by superoxide.

. PLOS ONE. PLoS ONE. Persistence of *Burkholderia thailandensis* E264 in lung tissue after a single binge alcohol episode. BMC Microbiology. BMC Microbiol. Rapid antimicrobial susceptibility testing and β -lactam-induced cell morphology changes of Gram-negative biological threat pathogens by optical screening. Poultry Science. Poultry Science. The role of unregulated chicken marketing practices on the frequency of Newcastle disease outbreaks in Kenya. Atmospheric Environment. Atmospheric Environment. Dependence of maximum concentration from chemical accidents on release duration. . Department of Defense Biological Defense Program Needs for Strategic Biotechnology Development. . . Department of Defense Chemical, Biological, Radiological and Nuclear Defense Program Overview. . Journal of Molecular Catalysis B:

Enzymatic. Journal of Molecular Catalysis B: Enzymatic. A simple approach to a vastly improved acetylcholinesterase activity and stability at elevated temperatures using magnetic microbeads and poly(N-(3-aminopropyl methacrylamide)) hydrogel supports. BMC Bioinformatics. BMC Bioinformatics. EpiViewer: an epidemiological application for exploring time series data. BMC Microbiology. BMC Microbiol. Nucleotide polymorphism assay for the identification of west African group Bacillus anthracis: a lineage lacking anthrose.

The exosporium of the anthrax-causing Bacillus anthracis endospores display a tetrasaccharide composed of three rhamnose residues and an unusual sugar termed anthrose. Anthrose is a proposed potential target for immunotherapy and for specific detection of B. anthracis. Although originally thought to be ubiquitous in B. anthracis, previous work identified an anthrose negative strain from a West African lineage isolated from cattle that could represent a vaccine escape mutant. These strains carry genes required for expression of the anthrose operon but premature stop codons resulting from an 8-bp insertion in BAS3320 (an amino-transferase) and a C/T substitution at position 892 of the BAS3321 (a glycosyltransferase) gene prevent anthrose expression. Various other single nucleotide polymorphisms (SNPs) have been identified throughout the operon and could be the basis for detection of anthrose-deficient strains.

In this study, we evaluated rhAmp genotypic assays based on SNPs at positions 892 and 1352 of BAS3321 for detection and differentiation of anthrose negative ($Ant^?$) West African strains. Discrimination of anthrose negative West African isolates was achieved with as low as 100 fg of DNA, whereas consistent genotyping of Sterne necessitated at least 1 pg of DNA.

Screening of a global panel of B. anthracis isolates showed anthrose-expressing alleles are prevalent worldwide whereas the anthrose-deficient phenotype is to date limited to West Africa. Our work also revealed a third, previously unreported anthrose genotype in which the operon is altogether missing from a Polish B. anthracis isolate.

SOLUTIONS TO CLASSICAL STATISTICAL THERMODYNAMICS CARTER

Q: What is classical statistical thermodynamics?

A: Classical statistical thermodynamics is a branch of physics that deals with the statistical description of macroscopic systems. It is based on the principles of classical mechanics and uses probability theory to describe the behavior of large ensembles of particles.

Q: What is the canonical ensemble?

A: The canonical ensemble is a statistical ensemble of systems that are in thermal equilibrium with a reservoir. The systems in the ensemble have the same energy and volume, but they can have different microstates. The probability of a system being in a particular microstate is proportional to the Boltzmann factor, which is given by the formula $P = e^{(-E/kT)}$, where E is the energy of the microstate, k is the Boltzmann constant, and T is the temperature.

Q: What is the partition function?

A: The partition function is a mathematical function that is used to calculate the thermodynamic properties of a system. It is defined as the sum of the Boltzmann factors over all possible microstates of the system. The partition function is related to the free energy of the system by the formula $F = -kT \ln(Z)$, where F is the free

energy and Z is the partition function.

Q: What are the limitations of classical statistical thermodynamics?

A: Classical statistical thermodynamics is a powerful tool for understanding the behavior of macroscopic systems. However, it has some limitations. One limitation is that it cannot be used to describe systems that are not in thermal equilibrium. Another limitation is that it cannot be used to describe systems that are dominated by quantum effects.

Q: What are some applications of classical statistical thermodynamics?

A: Classical statistical thermodynamics has a wide range of applications in physics and chemistry. It is used to calculate the thermodynamic properties of gases, liquids, and solids. It is also used to study phase transitions, chemical reactions, and biological systems.

ANTHONY D SMITH NATIONALISM BSBLTD

What does Anthony Smith say about nationalism? Smith argues that nationalism draws on the pre-existing history of the "group", an attempt to fashion this history into a sense of common identity and shared history.

What is Anthony Smith's model of national identity? In his book National Identity (1991), Smith formulates his classical definition of the nation as 'a named human population sharing an historic territory, common myths and historical memories, a mass, public culture, a common economy and common legal rights and duties for all members' (Smith 1991: 14).

Who started the idea of nationalism? The consensus is that nationalism as a concept was firmly established by the 19th century. In histories of nationalism, the French Revolution (1789) is seen as an important starting point, not only for its impact on French nationalism but even more for its impact on Germans and Italians and on European intellectuals.

What is the message of nationalism? Nationalism is an ideology which shows an individual's love & devotion towards his nation. It is actually people's feelings for their nation as superior to all other nations. The concept of nationalism in India developed at the time of the Independence movement.

What are the 3 elements of national identity? The key elements of national identity are cultural, ascriptive, and civic components. The key elements of national identity include cultural values, language, customs, traditions, symbols, and a sense of belonging to a particular nation.

What is national identity theory? National identity is a person's identity or sense of belonging to one or more states or one or more nations. It is the sense of "a nation as a cohesive whole, as represented by distinctive traditions, culture, and language".

What is Smith's primordial theory? Primordialism posits old, premodern nations, Smith's ethnosymbolism posits old, premodern ethnies that transform into nations. To whatever extent the equation ethnies = nation holds, to that extent the transformation ethnies → nation collapses indistinguishably into primordialism.

What is a famous quote about nationalism?

What best explains nationalism? Nationalism is an ideology that emphasizes loyalty, devotion, or allegiance to a nation or nation-state and holds that such obligations outweigh other individual or group interests.

What did Muhammad say about nationalism? Some Muslims believe that Muhammad condemned nationalism in many ahadith, stating "Whoever fights under a banner of foolishness [tribalism], supports tribalism, or gets angry for the sake of tribalism, he will die in a state of ignorance". When asked about nationalism he answered by saying "Leave it, it is rotten".

Who popularized nationalism? Napoleon's armies spread the spirit of nationalism throughout Europe and even into the Middle East, while at the same time, across the Atlantic, it aroused the people of Latin America. But Napoleon's yoke of conquest turned the nationalism of the Europeans against France.

LITTLE MOUSES BIG BOOK OF FEARS

What is the Little Mouse's Big Book of Fears about? This handbook uses simple oil-based pencil drawings and hand writings together with several kind of mixed-media collages from found objects to take us on a journey through the extensive list of mouse's fears from acrophobia (the fear of spiders) to sciophobia (the fear of shadows) only to show us that everyone, even ...

What did the little mouse do to prove his words? The little mouse went up to him and soon gnawed away the ropes that bounded the king of the beasts. Soon after the little mouse had finished gnawing away the ropes, he asked the lion to run away. What did the little mouse do to prove his words? The little mouse proved his words by trying hard to help the lion free.

What does the big book say about fear? According to The Book, "Fear is an evil, corroding thread; the fabric of our lives is shot through with it." Those who struggle with alcoholism usually drink to cope with the fact that they are afraid of themselves, someone in their lives, something they have to face, or the unknown future.

What is the moral of the story the mouse? Moral of the Story The story tells us how important friendship is and also the importance of helping others who are in need.

What does the little mouse symbolize? The mouse symbol is about the small creature capable of many things, despite its size. They are viewed as courageous and persistent and can succeed where others could not. In some tribes, the mouse's meaning is of witchcraft, such as in the Tlingit tribe.

What did the little mouse suggest? Answer. Explanation: Mice called a meeting and the mice said that a cat kills some mice every day and how they should prevent it. A little mouse suggests tying a bell around the cats neck and the bell will warn them and the mice will run and hide all agree the mouse and said good idea !

What is the most famous quote about fear? "The brave man is not he who does not feel afraid, but he who conquers that fear."

What is the message of the big book? The major goal of the book is to get individuals to commit to a specific program of recovery for alcohol addiction that includes embracing the notion of a "higher power." Over the years, this notion of a higher power has changed into a spiritual attitude, whereas initially, the higher power concept referred to in the ...

What is the AA fear prayer? 68 FEAR – "We ask Him to remove our fear and direct our attention to what He would have us be."

CHURCH OF MARVELS A NOVEL

27 Questions and Answers About "Church of Marvels: A Novel"***

1. **Who is the author of "Church of Marvels"?** A: Leslie Parry
2. **What is the setting of the novel?** A: New York City, during the late 19th century.
3. **Who is the protagonist of the story?** A: Kitty Moore, a young woman from a wealthy family.
4. **What is Kitty's quest throughout the novel?** A: To discover the secrets surrounding her brother's death.
5. **Who is Dr. Frederick Vanderlyn?** A: A renowned physician and Kitty's mentor.
6. **What is the "Church of Marvels"?** A: A mysterious organization that claims to offer spiritual enlightenment through unorthodox methods.
7. **Who is the enigmatic leader of the Church of Marvels?** A: Dr. Moreau Dulac
8. **What are the supernatural abilities of many of the characters in the novel?** A: They can communicate with the dead, heal wounds, and manipulate objects with their minds.
9. **What is the "ether" and how is it used?** A: A substance that allows for the performance of supernatural feats.
10. **Who is the villain of the novel?** A: Aristide Moreau, Dulac's estranged brother.
11. **What is Kitty's relationship with the villain?** A: She is drawn to his mysterious nature, but suspects he is involved in her brother's death.
12. **How does the novel explore themes of faith, science, and the unknown?** A: It questions the boundaries between the natural and supernatural, and the role of rationality and belief in shaping our lives.
13. **What is the significance of the "museum of curiosities"?** A: It houses artifacts and exhibits related to supernatural phenomena.
14. **Who is the "Unveiled One"?** A: A prophetic figure whose appearance is rumored to herald a new era.
15. **What is the "City of Shadows"?** A: A hidden realm where the supernatural is said to thrive.
16. **How does the novel depict the role of women in the late 19th century?** A: It challenges societal norms and explores the struggles and opportunities faced by women in that era.
17. **What is the "etheric force"?** A: A powerful energy that can be harnessed for both good and evil.
18. **Who is the "Lady in Red"?** A: A mysterious figure who appears to Kitty in visions.
19. **What is the "Book of Marvels"?** A: A forbidden text that contains knowledge of the supernatural.
20. **How does the novel explore the concept of identity?** A: Kitty struggles to reconcile her past with her present and to find her true self amidst the chaos and uncertainty.
21. **Who is the "Masked Man"?** A: A enigmatic figure who protects Kitty and guides her on her journey.
22. **What is the "Temple of Knowledge"?** A: A secret location where the Church of Marvels performs its rituals.
23. **How does the novel explore the intersection of art and spirituality?** A: It portrays artists as channels for supernatural experiences and their works as expressions of the transcendental.

24. What is the "spirit of the city"? A: An ethereal presence that embodies the vibrant and enigmatic nature of New York City.

25. How does the novel depict the complexities of love and loss? A: It explores the transformative power of grief, the complexities of human relationships, and the search for meaning in the face of adversity.

26. What is the ultimate resolution of Kitty's quest? A: She uncovers the truth about her brother's death and confronts the darkness within herself.

27. What is the significance of the novel's title? A: It refers to the Church of Marvels as a place where both wonders and horrors can be experienced, and to the idea that life itself is a wondrous and mysterious journey.

Who Needs to Read "Church of Marvels"?

Anyone interested in historical fiction, occult themes, supernatural mysteries, complex characters, explorations of faith and science, or stories that challenge societal norms will find "Church of Marvels" a captivating and thought-provoking read.

COLOURED PROGRESSIVE MATRICES SETS A A B B

27 Q&A on Coloured Progressive Matrices Sets A, A, B, B**

Q: What are Coloured Progressive Matrices (CPMs)? A: CPMs are non-verbal intelligence tests that use abstract patterns and colours to measure reasoning and problem-solving skills.

Q: What is the purpose of CPMs Sets A, A, B, B? A: These sets are used to assess cognitive abilities, including abstraction, induction, spatial reasoning, and perceptual organization.

Q: Who developed CPMs? A: John C. Raven, a British psychologist, developed CPMs in 1938.

Q: How many items are in each set? A: 12 items in Sets A and A, and 18 items in Sets B and B.

Q: What is the difficulty level of each set? A: Set A is the easiest, followed by Set A, Set B, and Set B (most difficult).

Q: What population is CPMs designed for? A: CPMs can be used to assess individuals from a wide range of ages, cultures, and backgrounds.

Q: What is the average score on CPMs? A: The average score varies depending on the age and population being tested.

Q: How are CPMs administered? A: CPMs are administered individually and take approximately 30-45 minutes to complete.

Q: What type of scoring is used for CPMs? A: CPMs are scored based on the number of correct answers.

Q: What do the results of CPMs indicate? A: CPM results provide information about an individual's general intellectual ability, specifically their reasoning and problem-solving skills.

Q: What are the limitations of CPMs? A: CPMs do not measure all aspects of intelligence and may not be suitable for individuals with certain disabilities or cultural backgrounds.

Q: How can I improve my CPM scores? A: Practice solving progressive matrices, develop your reasoning and problem-solving skills, and familiarize yourself with the types of items used in CPMs.

Q: What is the benefit of using coloured stimuli in CPMs? A: Colour provides an additional layer of complexity and can make the task more engaging for individuals.

Q: How are CPMs Sets A, A, B, B similar? A: They all involve abstract patterns and require individuals to identify the missing element.

Q: How do CPMs Sets A, A, B, B differ? A: They differ in difficulty level and complexity of patterns.

Q: What type of items are included in CPMs Sets A, A, B, B? A: Items include matrices, sequences, rotations, and transformations.

Q: What skills are required to solve CPMs Sets A, A, B, B? A: Perception, attention, reasoning, inductive thinking, and spatial processing.

Q: How can CPMs Sets A, A, B, B be used in clinical settings? A: They can assist in diagnosing cognitive impairments, assessing neurodevelopmental disorders, and evaluating intellectual functioning.

Q: How can CPMs Sets A, A, B, B be used in educational settings? A: They can identify students who may need additional support, monitor intellectual growth, and evaluate the effectiveness of interventions.

Q: What other types of progressive matrices tests are available? A: Other types include Standard Progressive Matrices, Advanced Progressive Matrices, and Mill Hill Vocabulary Scale.

Q: What are the ethical considerations when using CPMs? A: It is important to consider the cultural bias, fairness, and accessibility of the test.

Q: What resources are available to learn more about CPMs? A: The British Psychological Society (BPS) and the International Society for the Study of Individual Differences (ISSID) provide information and resources on CPMs.

Who Needs to Read Books About Coloured Progressive Matrices Sets A, A, B, B?

- Psychologists and neuropsychologists
- Educational psychologists and teachers
- Researchers in intelligence and cognition
- Individuals interested in cognitive assessment and measurement
- Students preparing for intelligence tests or cognitive assessments

dtra biological threat reduction program biological threat reduction program biological threat reduction program btrp biological threat reduction program ukraine