

Bio Terror Bible

EXPOSING THE COMING BIO-TERROR PANDEMIC

BIOTERRORBIBLE.COM: Bio-terror and pandemic related conferences have occurred on a regular basis since 9/11, but have recently started occurring on a monthly basis since March of 2011.

Title: 2011 Biodefense And Emerging Diseases Research Meeting Set

Date: January 31, 2011

Source: [Bio Prep Watch](#)

Abstract: The 2011 Biodefense and Emerging Diseases Research Meeting, hosted by the American Society for Microbiology, will bring together researchers working to fight bioterrorism and decision makers who shape the future of the biodefense research agenda.

The meeting will be at the Omni Shoreham Hotel in Washington, D.C. between February 6 and 9 and will address concerns that emerging infectious diseases will be a major factor in the public threat of bioterrorism.

Scientists, policy makers and public health researchers will come together to learn about the latest scientific developments during the meeting, which will include a series of keynote addresses by leaders in the field of biodefense. There will also be poster sessions that present the latest research on vaccines, biothreat agents, diagnostic and detection procedures, plant and animal pathogens, global surveillance and more.

There will be a featured lecture by D.A. Henderson of the Center for Biosecurity of the University of Pittsburgh Medical Center titled "The Eradication of Smallpox: A Continuing Saga" on the first day of the conference.

Other sessions include "New Interventions and the Challenges of Emerging Infections," "Emerging Plant Diseases and Agricultural Biodefense," and "Medical Countermeasure Development in the U.S. Government."

The American Society of Microbiology has 40,000 members worldwide. Its mission is to gain a better understanding of the basic processes of life and to promote applying that knowledge to improved health and environmental and economic well-being ([Bio Prep Watch, 2011](#)).

Title: Experts Gather At Symposium To Discuss Transportation And Bioterrorism

Date: March 27, 2011

Source: [Bio Prep Watch](#)

Abstract: On March 21, Emergent BioSolutions, Inc., hosted a symposium in Washington, D.C. on transportation and bioterrorism featuring governmental leaders, experts in urban emergency preparedness, disaster response and biological warfare.

Issues presented concerned the development of clear governmental focal points; the challenges faced by local, state, regional and national agencies; and the importance of prevention, detection and response. A particular emphasis was placed on retooling inner and outer communication practices, which is what occurs between governmental bodies and what occurs between governmental bodies and the public.

Henrich Hololei, head of cabinet for European Union Transportation Commissioner Silim Kallas, spoke about several challenges he faces, some of which are endemic to the E.U structure itself.

Hololei said that Europe faced transportation challenges in the wake of Iceland's volcanic ash cloud. An individual nation could not open its own airspace without consent from the larger group, complicating efforts to jumpstart what then was a badly damaged economic reality.

"It is a complicated jigsaw," Hololei said. "Issues in Europe are specific and multi-layered, yet at the end of the day, we want safe transportation systems. We want ways to stop bioterrorism, and, if something does occur, we want to save as many people as possible".

How that might be done, and what should be avoided in the process, was Randy Larsen's focus. A retired colonel who served in the Air Force for 32 years, Larsen is a commentator and adviser on national security issues, particularly large-scale threats like biological warfare.

Larsen said that rigorous cooperation between the public and private sector is needed. Citing the 27 percent of all cargo in America that travels on private airplanes as an example, he said that the notion of a government-only effort ignores private and public sector overlap. Focusing on approaches like these will save more lives in the long run, he said.

Terrorists are also less likely to attack nations with better emergency-capable infrastructures, Larsen said.

"The holes are too great, the dangerous elements to be smuggled in too small, those who wish us harm too many," Larsen said. "It's a difficult pill to swallow, but one that will save this country millions – millions that can be better spent on things that really will work."

Jerry Hauer, a former director of the Office of Emergency Management under Rudy Giuliani, and later an assistant secretary within the Department of Health and Human Services, referenced the need for new communication patterns among agencies and new communication outreaches to the public. He expressed concern that local and national governmental agencies often presented overly confident approaches to the complicated demands that arise after a grave emergency.

Hauer described the difficulty in communicating directly to those underground in the event of a biological attack as a transportation issue that can be fixed. He also warned of a more enigmatic problem.

"Even now, just a decade after 9/11, our level of vigilance has decreased," Hauer said. "Complacency is a problem. Hopefully it won't take another event to remind people to be alert and watchful."

The event, hosted by Emergent BioSolutions, Inc., reflects the company's involvement in matters of government policy and disaster preparedness. Emergent BioSolutions, Inc., is the manufacturer of BioThrax, the only FDA-licensed vaccine for Anthrax ([Bio Prep Watch, 2011](#)).

Title: Experts Gather To Fight Bioterror Attacks On Food Chain

Date: April 28, 2011

Source: [Bio Prep Watch](#)

Abstract: With a significant portion of America's food supply being imported, consumers are vulnerable to tainted food and intentional bioterrorism attacks, according to experts gathering at this year's International Symposium on Agroterrorism in Kansas City.

Approximately 600 delegates attended the three day conference, sponsored in part by the FBI and the Heart of America Joint Terrorism Task Force, KansasCityStar.com reports. The main mission of the event is to protect the food supply worldwide while illustrating the importance of a coordinated effort.

U.S. food and agricultural product imports have been rising for decades, increasing from \$41 billion in 1998 to \$78 billion in 2007, according to the USDA. An estimated 50 percent of U.S. food is now imported.

"There are more firms registered with the Food and Drug Administration to supply food to the U.S. from outside the country than there are inside the country," Shaun Kennedy, deputy director of the National Center for Food Protection and Defense at the University of Maryland, said, according to KansasCityStar.com.

The CDC estimates that, each year, roughly one in six Americans, or approximately 48 million people, contract a food-borne disease.

To counter these threats, Congress passed and President Barack Obama signed into law the Food Safety Modernization Act of 2011 in January. This initiative aims to ensure the U.S. food supply is safe by shifting the focus of federal regulators from responding to contamination to preventing it.

Seen as an important first step, many health officials suspect it will take a great deal of vigilance to protect the American food supply, KansasCityStar.com reports ([Bio Prep Watch, 2011](#)).

Title: Nebraska Holds Two Day Symposium On Bioterror Preparedness

Date: May 12, 2011

Source: [Bio Prep Watch](#)

Abstract: Dozens of public health officials and emergency responders recently attended a two day symposium put on by the Nebraska Center for Preparedness Education on the subject of how to prepare for a bioterror attack.

The symposium, which took place in Norfolk, Neb., is meant to cover illness outbreaks, helping victims in a disaster and how to respond to acts of terrorism. The organizers of the event said that education on this subject is an important part in helping personnel plan and prepare for such an attack, KTIV.com reports.

"It gives us ideas for areas where people feel like they may have gaps in their disaster planning," Sharon Medcalf of the NE Center for Preparedness said, according to KTIV.com. "And then, we build programs based on some of the needs assessments they would get, and often it's feedback from this conference itself."

Nebraska Lt. Governor Rick Sheehy was also on hand to speak about a number of issues, including a new national watchdog program called "See Something, Say Something."

"It's primarily for citizens," Sheehy said, according to KTIV.com. "If they see suspicious activity, if they see suspicious packages...just something isn't what it should be or is out of the ordinary, that they report that."

In addition, Norfolk Fire Chief Shane Weidner discussed how his team of firefighters dealt with a December 2009 propane fire at the former Proteint Foods plant.

The event concluded on Wednesday ([Bio Prep Watch, 2011](#)).

Title: Biodetection Technologies Conference Set For June 24

Date: April 22, 2011

Source: [Bio Prep Watch](#)

Abstract: The 18th Biodetection Technologies Conference, an internationally recognized event for experts in detection and identification of biological and chemical threats, will be held on June 24 in Washington, D.C.

The event will explore the latest R&D developments and ready-to-market systems for major biothreat identification, biothreat detection and analysis both at the point-of-care and in the field.

The conference will be held at the Marriot Wardman Park and will feature Dr. Peter Emanuel as the keynote speaker.

Emanuel is the bioscience division chief at the U.S. Army Edgewood Chemical Biological Center.

During his address, Emanuel will discuss the results of a 2011 biosurveillance hardware systems survey. The survey targeted systems that have applicability in assessing human exposure to chemical, biological and radiological agents. It focused on information on commercially available and maturing diagnostic and identification/detection products that have technology readiness levels from TLR 4 to TLR 9, not including basic research concepts.

Emanuel will examine the findings of the survey and what it might mean for interagency needs for the purchase of technology in the future.

Other topics that will be discussed at the conference include bioinformatics for biodefense; challenges for rapid, early, specific and sensitive detection; and technological advances in detection and identification of biological threats ([Bio Prep Watch, 2011](#)).

Title: [The Threat of Bioterrorism: Improving America's Response Capabilities](#)

Date: June 16, 2011

Source: [George Washington University](#)

Watch Video [here](#)

Abstract: Panel of current and former members of Congress discusses the biological threats that keep them up at night at GW event.

When [Frank Cilluffo](#), director of the Homeland Security Policy Institute and associate vice president for homeland security, noted that the event at 1957 E Street featured “the titans of national security,” he wasn’t kidding.

The June 14 event, titled [The Threat of Bioterrorism: Improving America’s Response Capabilities \(video\)](#), drew panelists Sen. Joe Lieberman (I-Conn.), Rep. Mike Rogers (R-Mich.) and former Senators [Bob Graham \(D-Fla.\)](#) and [Jim Talent \(R-Mo.\)](#).

The latter two are chairman and vice chairman of the [WMD Center](#), which cosponsored the event with the Homeland Security Policy Institute.

One topic that the panelists and Mr. Cilluffo, who moderated the event, kept returning to was what keeps them up at night, which was mostly a biological terrorist attack on the U.S.

Rep. Rogers added Iran and North Korea to the list of sleep-threatening dangers.

One of the most important sentences of the 9/11 Commission Report was the claim that the attacks occurred because of a failure of U.S. imagination, Sen. Lieberman said, interpreting the failure as an inability or refusal to imagine what al-Qaeda was plotting.

“We know that the intent to hurt us continues,” he said. “It doesn’t take a very aggressive imagination ... to believe that groups that are venomously anti-American would be considering biological attacks on us.”

Part of the legislation Sen. Lieberman is working on now is creating a national bio-defense strategy. “I don’t like to be kept up at night, so to whatever extent I can reduce the causes of the sleepless nights, not just for myself but also for other Americans, I’d like to do so,” he said.

Former Sen. Talent explained why the prospect of a biological attack was so terrifying. Whereas the 9/11 attacks killed about 3,000 people, conservative estimates say a biological attack could claim 10 to 100 times that number of lives, and it would be easy for the terrorists to “reload and hit another city.” The attacks would also leave residue that would make it tough to rebuild.

“The American economy would just stop,” he said.

Former Senators Talent and Graham also discussed the annual report cards their center gives for U.S. efforts to protect itself from terrorist attacks.

Sen. Graham said his background working in higher education taught him about the importance of issuing something like a report card. “If you don’t evaluate a particular subject it’s not likely to be taught or not likely to be taught well,” he said.

Out of 18 items on last year’s report card, the U.S. government received four grades of F. The most significant F was for being unprepared to respond to an act of bioterrorism. “We think this is a serious national security risk,” Sen. Graham said.

Sen. Talent said the pair hadn’t realized the significance of biological threats at first, but after conducting hundreds of interviews as part of the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, which was tasked with following up on the 9/11 Commission Report, they realized a biological attack would be the most dangerous threat to the country.

The U.S. knows that al-Qaeda wanted to build biological weapons in the 1990s, it would not need to undergo intense organizational realignment to construct such a weapon and biological weapons are relatively easy to create and stock pile, he said.

“This is not a next generation threat. This is now.”

Rep. Rogers said elements of a national bio-defense strategy, like vaccines for Anthrax, are “something you hope you never use.”

“Everyone is always mad at the firefighters around budget time, but you love them when you pick up the phone and they show up and protect your house,” he said. “When you need them, you need them. Same with these vaccines. This is not something you can go back and say, ‘We’ve had an event. Oh, by the way, where do we go buy 8,000 doses of Anthrax vaccine.’ It’s not going to happen” ([George Washington University, 2011](#)).

Title: Pandemic Provides Backdrop For Fourth ESWI Conference

Date: September 12-14, 2011

Source: [ESWI](#) (PDF)

Abstract: The 2009 H1N1 pandemic makes this ESWI conference more relevant than ever and is driving EU efforts to improve pandemic preparedness. Science has a major role to play in addressing unanswered questions.

“It’s quite timely that we’re having this meeting now, just after the first pandemic of the 21st century,” said Dr. A.D.M.E. Osterhaus, ESWI Chair, as he opened the Fourth ESWI Influenza Conference in Malta. Osterhaus was referring, of course, to the swine flu outbreak of 2009. He noted that the pandemic provided the opportunity to explore lessons learned and prepare for the next one.

According to Osterhaus, this conference is also special because young scientists will present new data and all the scientific sessions will be co-chaired by a young scientist. “We’re cultivating the next generation of scientists,” said Osterhaus.

EU prepares to update pandemic preparedness across Europe

Osterhaus’ opening remarks were followed by a video message from John Dalli, European Commissioner for Health and Consumer Policy. Dalli recalled that back in December 2009, EU Member States agreed that by 2014, 75% of healthcare workers and people at risk would be

vaccinated against influenza. He said that the EU is encouraging Member States to meet their commitments and suggested that “the time has come to update guidance on influenza pandemic preparedness across Europe.” Dalli described EU efforts to ensure equitable access to vaccines for all Member States by developing a mechanism for joint procurement.

Dalli concluded his message by underlining the important role of science. “It is only by combining the latest scientific knowledge with effective policy planning, that we will succeed in addressing influenza,” he said.

Nobel Laureate says “there’s still a lot to be solved”

Dr. Peter C. Doherty of St. Jude Children’s Hospital in Memphis, Tennessee and the University of Melbourne in Australia delivered the keynote address. Doherty gave a wide-ranging talk that presented influenza research performed over the past several decades. He summarized research findings, added his own conclusions and raised questions requiring further scientific investigation.

According to Doherty, the real problem with the influenza virus is that it’s highly contagious but the infected don’t necessarily feel sick while they’re infectious. On the plus side, unlike HIV, influenza infections are “self-limiting” provided one can limit the damage. “We just need to get people through the acute phase,” said Doherty. For this purpose, Doherty ended his keynote with a challenge: “**Can we make a universal vaccine?**”

Scientists provide strong evidence for pandemic threat

Scientists have shown that H1N1 is geographically mobile and can reassort, and they have identified influenza virus strains that could mutate into the next pandemic virus. Experimental research has shown that with few mutations H5N1 can become airborne.

“Pigs DO fly.” That was the message from Dr. Malik Peiris of the University of Hong Kong. Peiris was one of two keynote speakers during the plenary session on Monday. His talk, “When pigs fly: Insights on pandemic emergence”, examined potential pandemic threats, focusing on the 2009 H1N1 pandemic strain.

Dr. Peiris was well-positioned to study the issue as about half the global population of pigs is to be found in China and 4,000-5,000 pigs are slaughtered everyday in Hong Kong alone. He and his team have been conducting a 14 year surveillance study of swine influenza in China.

Flying pigs?

Dr. Peiris’ aim was to trace the origins and genomic evolution of the 2009 H1N1 pandemic virus. He found that after the triple reassortant strain became dominant in North America, it did not remain geographically isolated. Peiris and his team found that swine flu viruses of various

lineages were repeatedly introduced in China. “These viruses readily moved across countries and continents, probably through breeder stock,” said Peiris. Furthermore, the North American strain reassorted in China. Peiris said that the reassortment events in China gave clues how the pandemic virus emerged, even though the pandemic virus did not originate there.

Viral determinants of human transmission

Peiris next set out to identify viral factors that contribute to transmission risk for humans. He and his researchers studied tropism in the human upper respiratory tract in ex vivo cultures, transmission in ferrets and serological herd immunity. They identified one reassortant strain that severely infected both the nasopharynx and the bronchial tract. In the ferret study, this strain was also the only one which displayed any hint of aerosol transmission, according to Peiris.

On the hunt for a killer

Given that this reassortant virus shares 7 gene segments of common origin with the pandemic virus (but does not pre-date it), Peiris and his colleagues decided it warranted further study. They added to the reassortant virus the neuraminidase enzyme it was missing as well as 3 polymerase genes that had shown high levels of activity in tests. The new strain was not more infectious (only one out of three ferrets got infected) but the severity of the disease was enhanced. “Despite these results, 915 – the reassortant virus – is the only virus of swine origin that does infect human tissue ex vivo and aerosol in humans,” said Peiris. He found that sero conversion is broadening human immunity to swine viruses but not to avian viruses. Thus, according to Peiris the biggest danger would be

reassortment of an H1N1 virus with an avian virus such as H5N1. Peiris concluded his presentation with a strong message: "There's a need for a step change in surveillance of swine viruses and animal viruses in general."

H5N1: a persistent danger

Dr. Ron Fouchier of the Erasmus Medical Centre in the Netherlands delivered a similarly strong message during his presentation that H5N1 continues to be a pandemic threat. Fouchier has studied H5N1 in Indonesia, one of countries hardest hit by avian influenza. The island nation of 240 million people has had 178 confirmed cases of avian influenza of which 146 have been fatal.

Vaccine failure

Intrigued by evidence that classical vaccines were failing, Fouchier and his colleagues used a Hemagglutination inhibition assay to study the antigenic drift of the new virus strains. "We discovered that only 1-3 substitutions are sufficient to cause large changes in antigenic drift," said Fouchier. Moreover, large antigenic differences between and within H5N1 clades could affect vaccine efficiency and even result in vaccine failure, warned Fouchier. Indonesia decided to switch to a different vaccine strain.

A "stupid" experiment leads to a valuable result Fouchier and his team's biggest discovery, however, was based on what he termed a "stupid" experiment. He and his team introduced mutations, under strict laboratory safety procedures, by reverse genetics into laboratory ferrets. They then collected a nasal wash from each infected ferret and inoculated another ferret after a few days. They repeated this process ten times. The result? H5N1 had been transmitted to three out of four ferrets. "This virus is airborne and as efficiently transmitted as the seasonal virus," said Fouchier. His research team found that only 5 mutations, 3 by reverse genetics and 2 by repeated transmission, were enough to produce this result. "This is very bad news, indeed," said Fouchier.

Clinical approaches to pandemic preparedness

Early diagnosis and treatment is the key to stamping out a pandemic before it peaks and overwhelms the healthcare system. With this in mind, participants in the session "Clinical impact and diagnostic approaches" offered their views on ways to improve.

Dr. Peter Openshaw of Imperial College in London provided a fascinating inside view of the UK's efforts to combat the H1N1 pandemic, focusing on its clinical impact. "The UK had one of the most highly developed pandemic preparedness plans in the world," according to Openshaw, "and the risk of pandemic human disease was considered highest among threats as far as impact and likelihood, even higher than terrorism."

The UK's plan was centered on blunting the peak of any pandemic outbreak. "You can tolerate a slow-burning outbreak, but it's the peak that causes a breakdown in health services," said Openshaw. The pandemic hit the UK's shores in two waves: the first wave in the summer of 2009 and the second wave in the winter of 2009/10. During the first wave, flu-associated bed-days went from 4,163 in 2008 to 33,376 in 2009, a 7-fold rise, and, most alarmingly, the 17-39 year age group was particularly hard-hit, with bed-days increasing from 169 to 6,253 from October to December, a 37-fold increase.

Openshaw based his research on two studies:

Flu-CIN, a study funded by the Department of Health that aimed to collect clinical information fast; and MOSAIC, a Wellcome/MRC funded study that focused more on the discovery of pathogenesis. The Flu-CIN study found that mild asthma increased patient risk, but that it was a risk factor for admission only, not for severe outcome. The studies' findings resulted in several changes including a revision of UK clinical guidance and a change to the UK's antiviral, antibiotic and vaccination policy, away from prophylactic use in the case of antivirals.

To Openshaw perhaps the most important lesson is that **"You need to be prepared in peacetime. You have to move very fast during a pandemic."**

Real-time PCR for mapping a whole entire genome sequences

Dr. Martin Hibbard of the Genome Institute of Singapore described recent advances in Real-time Polymerase Chain Reaction (RTPCR) technology. He noted that if a physician's test for H5N1 is negative, RT-PCR could present an alternative to that process. "Genome sequences can be rapidly

analyzed and sequenced, so the technique can help with the rapid identification of outbreaks,” said Hibbard.

The process works by extracting a total nucleic acid from a clinical sample. This is then amplified and hybridized onto a micro-array chip. The result is detection signals for an entire genome sequence which can then be analyzed using automated bioinformatics. The technology has already proven itself useful. Singapore’s Ministry of Health used it to track which viruses were mutating most rapidly during the H1N1 flu pandemic, and in at least one instance even used it for person to person recognition.

In vivo imaging: a superior approach?

Koet Stittelaar of Viroclinics Biosciences in the Netherlands presented a very different diagnostic approach. Using CT imaging on ferrets, he and his group overcame the limitations of current analytical approaches. Current preclinical animal models examine the severity of disease (necropsy) at a single fixed point in time. But antiviral efficacy, for example, depends greatly on when treatment was begun. Moreover, with in vivo imaging, Stittelaar and his colleagues can compare data from a single animal rather than from several different animals.

Seasonal influenza and acute myocardial infarction

Dr. Charlotte Warren-Gash’s study of UK primary care data sought to see whether myocardial infarction might be triggered by respiratory infections. For her doctoral thesis at University College in London, she linked data from the General Practice Research Database of 5 million active patients with data from the Myocardial Ischaemia National Audit Project, adjusting the data for seasonality and other factors. “We found an increased risk of myocardial infection following acute respiratory infections,” said Warren-Gash, “but there was no strong evidence that the effect on myocardial infarction was greater for influenza than for other infections.”

Vaccination: history proves it works, whatever the disease!

Does the world’s long history of vaccination justify – despite the associated risks – its use in reducing the burden of disease? For all panel members of ESWI’s final workshop on Day 1, the answer was a resounding “yes”.

From Chinese variolation techniques against small pox in the 1600s to today’s efforts to eradicate polio, “the history of vaccines in the fight against infectious diseases has been a success story,” Dr. Ab Osterhaus, ESWI chairman told the group, pointing to today’s near-eradication of diseases that were once the scourge of humanity such as measles. “We have the tools to fight these diseases with vaccines.”

Yet public fear and mistrust about the safety of vaccines often stand in the way of high vaccination rates. These obstacles can only be overcome by delivering the right information at the right time to those who communicate directly with the public: the media and other stakeholders.

“You have an opportunity every year to educate your media about the benefits of influenza vaccination: in the autumn when seasonal flu preparations begin,” Dr. Marc Van Ranst, researcher at Belgium’s University of Leuven, told his audience.

“The knowledge you can impart to the media and thus to the public can influence them and prepare them for a pandemic whenever it hits.” Public misperceptions about vaccination are rampant and can work heavily against the best efforts of science, however.

“Conspiracies of all kinds have always been there—even in Jenner’s time,” said Osterhaus, referring to the 18th English scientist who developed the first the smallpox vaccine. “Today I’m most concerned with pseudo-scientists who say it is good to be exposed to disease in childhood to strengthen the immunological system! This has got to be fought. **However, we as scientists have got to package our message in a different way if we want more effective communication with the public.**”

Japanese health officials know that by direct experience, as panelist Dr. Masato Tashiro, told the group. Noting that Tokyo shifted away many years ago from mandatory flu vaccination for young children partly due to a hostile press that called the policy a violation of children’s rights, the government has since embraced voluntary vaccination and seen uptake rise – and mortality fall – among children since 2002. The reason? “The government simply did a much better job of promoting the positive effects [of vaccination] for children,” said Tashiro ([ESWI, 2011](#)).

Title: Charting The Future Of Biosecurity: Ten Years After The Anthrax Attacks

Date: October 4, 2011

Source: [Center for Biosecurity of UPMC](#)

Abstract: *Charting the Future of Biosecurity: Ten Years after the Anthrax Attacks* was held in Washington, DC, on October 4, 2011. Jointly hosted by the Alfred P. Sloan Foundation and the Center for Biosecurity of UPMC, this invitational meeting brought together thought leaders from the federal government, the policy community, think tanks, academia, and media outlets. The meeting provided a forum for leaders in the biosecurity community to reflect on progress made since 2001 and to consider priorities for the biosecurity policy agenda in the years ahead. This meeting was made possible by the generous support of the Alfred P. Sloan Foundation

.Opening Remarks by Thomas V. Ingles

In his remarks, Thomas Inglesby, Director of the Center for Biosecurity emphasized the importance of preparing for the future of biosecurity given the looming threats of bioterrorism, pandemic flu, and other emerging infectious diseases. He acknowledged the difficulty of the mission but noted that there are reasons for optimism—including the breadth and depth of knowledge, experience, and dedication among those now in the field; the strength of American science and technology industries and the robust government programs now working to develop biodefense; and the notable progress to date. Dr. Inglesby also highlighted some significant gaps, such as early disease outbreak detection capabilities, post-event decontamination plans, and medical countermeasures. He emphasized that these pressing needs must be addressed regardless of growing budget constraints. Dr. Inglesby closed by urging all present to remain persistent and persuasive in their efforts to draw attention and resources towards biosecurity.

Challenges of Reporting on the 2011 Bio-attack

Jeanne Meserve, former CNN Homeland Security Correspondent, presented a video montage of news coverage from the 2001 anthrax attacks. She recalled the difficulties of acquiring accurate information about the events surrounding the attacks, which she characterized as both a public health and a communications disaster. She described the press as feeling “whip sawed” by conflicting information from government and law enforcement representatives, and she noted that the unknowns and confusion about risk created fear among the public and among members of the press, who had trouble determining whether they were putting themselves and their families at risk by covering the events. Ms. Meserve recommended a policy of frank and proactive communication from government officials, and she suggested that members of the press improve both their communication skills and their scientific knowledge so they are better able to convey facts and evidence responsibly. She also emphasized that the press has an obligation to strike a tone that informs people without inciting fear.

Present & Future Biothreats

Colonel Randall Larsen, D. A. Henderson, and Dr. Richard Danzig engaged in a discussion of present and future biothreats. As moderator, Col. Larsen first acknowledged that the panelists were visionaries in the field, and he asked them to comment about their experiences and to suggest priorities for the future.

Dr. Henderson replied by emphasizing the importance of continually asking and answering this question: “What would we do if there were a bio-attack tomorrow?” Dr. Henderson expressed concern that what he perceives as a lack of strong leadership in the federal government would hinder the nation’s ability to coordinate and marshal an effective response. He noted that the responsibility for a federal response to a biological attack is dispersed across a number of agencies, and he worried that a long interagency process could be slowing decisive decision making. Dr. Henderson called for a response plan that will have broad public support so as to avoid conflicting advice.

Dr. Danzig expanded on that notion to remind the audience that, in the face of catastrophe, the public often looks to leaders outside of government to validate recommendations, and he noted the need to reach and educate known leaders outside of government in advance. He also discussed what he considers systemic issues that hinder our response capabilities, the most serious of which, he argued, is our federalist system. That the federal role in preparedness and response must overlay and complement state and local response systems complicates planning. Another systemic problem is that government planning frameworks are often too narrowly focused on the immediate and acute

phase of a disaster. He argued for an expanded perspective on planning and response—one that accounts for the extended period of time and long term effort that will be required after an attack to restore normal functioning. Danzig contended that those working in biosecurity and biodefense should think beyond the casualty component of a biological attack, explaining that he has come to think of bioweapons not so much as weapons of mass destruction, but as weapons of *mass disruption*.

Both Drs. Henderson and Danzig acknowledged the uncertainty that attends the field of biosecurity, given the inherent difficulty in sound predictions about soundly predicting the outcome of a bio-attack. They encouraged the audience to acknowledge the potential threat of synthetic biology and other new pursuits in the biological sciences in preparing our defenses, noting in particular that our current focus on a finite set of threats may soon be an obsolete approach. Dr. Henderson closed by stressing the need for more biologists at high levels in the federal government who can raise awareness and help guide development of sensible, strategic defense strategies.

Looking Ahead in U.S. Health Security

As moderator of a panel discussion among Nicole Lurie, Andrew Weber, and Thomas Frieden, Richard Besser opened the discussion by asking panel members what threats keep them up at night. Dr. Lurie described the recent events in Japan as what haunts her—multiple, serial disasters coalescing to wreak unprecedented devastation. Dr. Frieden worries about unknown and unplanned-for disasters against a backdrop of shrinking public health infrastructure and resources. Mr. Weber's concern, from his DoD vantage point, is terrorists' stated interest in biological weapons and the advances in the biological sciences and technology that are making the tools needed to make bioweapons increasingly accessible.

Mr. Weber suggested that efforts to strengthen interagency and international partnerships have made our capacity to detect and respond to threats more robust, and he cited as an example a recent drill that DoD conducted with the Republic of South Korea that included both South Korean authorities and senior members of DHS and CDC. Mr. Weber said that in more than 20 years in the federal government, he had never witnessed interagency coordination as strong as the coordination in effect in the current administration.

Dr. Besser then asked the panelists to address what he described as a popular perception that federal agencies spend too many resources on low-probability events and that they may even overreact to emerging biological threats, such as H1N1. In response, Dr. Lurie indicated that the H1N1 response underscored the need for a fully functional public health infrastructure capable of responding to all types of events, an assertion confirmed by Dr. Frieden, who also noted that a strong public health system is essential to both chronic disease response and emergency response. Cautioning that it is always better to overreact to emerging threats, Dr. Frieden pointed out that the H1N1 flu strain had probably been spreading in Mexico for months before it came to the attention of the United States, and that the lesson from H1N1 is that we could be more proactive in identifying infectious disease threats. Mr. Weber followed by adding that no country has a big enough "moat" to protect them from a communicable disease, and that a robust global disease surveillance system is an urgent need in the effort to improve biosecurity.

Dr. Besser pressed the panel members to explain international response efforts and their connections to homeland security. Pandemic and avian flu, according to Dr. Frieden, have catalyzed a partnership between the U.S. and Chinese CDCs, which now post weekly online updates about circulating flu strains in an effort to provide better awareness and advanced warning for emerging threats to homeland security.

Concluding with a discussion of domestic health security, panelists identified countermeasure distribution and resource allocation as pressing near-term challenges. Dr. Lurie promoted a federal approach that meshed with state and local infrastructures, but she cautioned that federal budget policies limit the ability to reallocate funds for immediate emergency use on the local level. Dr. Frieden pointed out that there is no broad plan for medical countermeasure acquisition and distribution and he suggested that a "quick and simple" answer to these complex problems is probably impossible. Instead, he suggested, the answer may be different strategies for different populations and circumstances.

Special Taped Interview of Tom Daschle

In a taped interview prepared for this meeting, Senator Tom Daschle, former U.S. Senate Majority Leader, shared a few of his memories from the morning of 9/11 and the anthrax letters of October 2001. He also offered his thoughts on what is needed to better educate America's leaders about the threat of bioterrorism.

Transformative Science in Biosecurity

Dr. Inglesby returned to the conference stage to moderate a discussion about advances in the life sciences and implications for biosecurity among Margaret Hamburg, George Poste, Tara O'Toole, and Craig Venter. Drs. Venter and Poste opened with their visions for the future: Dr. Venter asserted that automation of labor- and time-intensive processes would reduce the timeline for producing vaccines to days, if not hours. He cited his lab's recent experience in working with BARDA and Novartis to create a synthetic flu vaccine virus strain in 10 hours as a sign of medical countermeasure progress to come. Dr. Poste added that, in the future, proteins would be manufactured synthetically from cell-free systems, including vaccines, which would make regulating the vaccines significantly less burdensome. Dr. Poste also suggested that biosecurity challenges would expand in the coming years due to antibiotic resistance and as population growth creates added pressure on agriculture production due to population growth. He contended that synthetic biology would play a crucial role in revolutionizing the industrial ecology of modern society as it will help to secure food and energy resources.

While acknowledging that advances in the life sciences are "imbued with potential to lessen human suffering," Dr. O'Toole cautioned that advances in science are dangerously outpacing the government's ability to organize and regulate to ensure that biology and new technologies are not being applied to dangerous purposes. She explained that the concepts described by Drs. Venter and Poste are complex and difficult to translate to government officials and members of Congress who do not have years of training and experience in the field. Dr. Hamburg described how the FDA is working to change its processes and the ways in which it engages with the scientific community; she noted in particular her efforts to undo long held perceptions of the FDA as an agency bogged down by bureaucracy ([see Dr. Hamburg's remarks from the Center's March 2011 conference on the growing role of the life sciences for greater detail](#)). Dr. Hamburg encouraged her colleagues in the scientific community to think about not only science, but also about the tools regulators will need to evaluate science.

Dr. Inglesby asked the panelists if they thought the U.S. is losing its competitive edge in math and science. Drs. Venter and Poste suggested that, although we have not yet lost our edge, there are problems in both our educational system and our immigration policy that threaten to degrade the pool of talent available to the biotechnology and pharmaceutical industries.

The panel concluded with an overall assessment of the threat posed by synthetic biology. Dr. Venter cautioned that there are many other threats, such as naturally occurring agents, which call for immediate attention. Dr. Poste contended that the beneficent potential of synthetic biology outweighed its destructive potential. The scientists' optimism was shared by Drs. O'Toole and Hamburg, but they reiterated that the threat potential certainly should not be ignored.

Talking Biosecurity with the Public

Senator Jim Talent spoke about the challenges of communicating the biological weapons threat to the public and to Congress. He acknowledged that it is difficult to raise consciousness without engendering fear. He also asserted that we are limited by our 18th century model of bureaucratic government, which is not well-positioned to respond to rapidly evolving threats, fast-moving disasters, and the attendant need to make decisions rapidly and to quickly communicate them to the public.

Senator Talent agreed with earlier speakers that biological weapons represent an increasing asymmetric threat, particularly as barriers to weaponizing pathogens diminish as a result of progress in the life sciences. Senator Talent described the WMD Center's efforts to address this threat, in particular the [Bio-Response Report Card](#) on the state of U.S. preparedness for a biological attack. He emphasized the need to develop systemic resilience to a biological attack, which would reduce the high cost of last-minute preparations and response when a threat is actualized. He concluded by

asserting that under current budget conditions, the U.S. government can no longer rely on a reactive approach to crisis.

The Next 5 Years of the Biological Weapons Convention

Thomas Countryman discussed the U.S. State Department's perspective on next steps in advancing the Biological Weapons Convention (BWC), emphasizing his conviction that this is an influential forum for demonstrating the constructive potential of the biological sciences while discouraging destructive applications. The BWC serves as a norm against malevolent application of the life sciences. He said that maintaining that norm requires frequent and proactive consultations with relevant government, academic, and commercial entities. In the future, he noted, the BWC will include the emergency response community for better understanding of the resources and capacities that will help to mitigate a disease outbreak. Acknowledging that these new efforts would cost more, Mr. Countryman reminded the audience that in order for the BWC to contribute more to our security, we need to contribute more to the BWC.

Biosecurity Achievement Award Presentation to Paula Olsiewski

The meeting concluded with the presentation of an achievement award to Dr. Paula Olsiewski for her leadership and support of the field of biosecurity. In presenting the award, Dr. Inglesby outlined the many accomplishments of Dr. Olsiewski and the Alfred P. Sloan Foundation and reminded the audience that the Foundation's support was in place well before the anthrax attacks. In accepting the award, Dr. Olsiewski thanked former Sloan Foundation president Ralph Gomory for his vision, and thanked current president Paul Jaskow and her colleagues, including her assistant Yolanda Wolf, for their support as well. Dr. Olsiewski concluded by thanking all of the grantees for all of their important work and contributions to the field ([Center for Biosecurity of UPMC, 2011](#)).

Title: Experts Optimistic At U.S. Biosecurity Outlook

Date: October 6, 2011

Source: [Bio Prep Watch](#)

Abstract: U.S. biosecurity policy has made significant progress since Sept. 11, 2001, terror attacks and the anthrax attacks of 2001, but continues to confront myriad challenges in dealing with future biological hazards, both natural and man-made.

At a conference of biosecurity experts hosted by the University of Pennsylvania Medical Center and the Alfred P. Sloan Foundation, progress made over the last 10 years was reviewed and problems for the future were outlined.

In opening remarks, Thomas Inglesby, the CEO of the Center for Biosecurity of UPMC, offered three main reasons for optimism regarding the outlook for biosecurity.

"The first reason for optimism is the community in this room," Inglesby said. "A second reason for optimism is we have U.S. science and technology as our fuel...And a third reason for optimism is the good work that has already happened."

Not only has the community of experts been greatly expanded, as evidenced by the number of attendees at the conference, but the U.S. science and technology base has been greatly expanded and a number of programs and policies have been implemented and refined. Laboratories to quickly characterize and develop vaccines have been established. The U.S. has greatly expanded capacity and has held field exercises and coordinated planning on an inter-agency basis. Rapid distribution channels for the distribution of vaccines have been established and universal antibiotics may well be on the horizon.

Despite these advances, however, much of the conference focused on remaining shortfalls that must be addressed. Most significantly, the lack of an attack over the past 10 years and the loss of personnel in Congress and the executive branch has resulted in a "out of sight, out of mind" mentality, the experts warned.

“Progress has been significant but clearly inadequate to the problem,” Richard Danzig, chairman of the board for the Center for a New American Security, said.

In a panel on “Present and Future Biothreats,” D.A. Henderson of the UPMC Center for Biosecurity said that much more needs to be done in terms of how best to inform cities and states on how to handle biological threats, whether to shelter in place or evacuate, how to clean up after a biological attack and the necessity to lay out a coherent plan well in advance of such an event.

Danzig added that even such rudimentary questions as whether citizens should open or close windows or whether or not to vacuum remain unanswered.

There is also a tendency for decision-makers to focus planning and exercises on a one or two day event while ignoring modeling for much longer incidents and the efforts that need to be established for handling the clean up associated with a major biological attack.

According to Danzig, economic consequences have been minimized and it is probably more accurate to refer to biological attacks “not as weapons of mass destruction, but as weapons of mass disruption.”

In that regard, Randall Larsen of the WMD Center said that the Environmental Protection Agency spends 50 percent less studying how to clean up after a major incident than the military spends on the Marine Corps marching band.

In a panel on “Looking Ahead in U.S. Health Security,” Thomas Frieden, the director of the Centers for Disease Control and Prevention, said that what keeps him awake at nights is the possibility of facing an attack for which we are unprepared. We are “not going to face what we have prepared for,” Frieden said.

There are 44,000 fewer people working in state and local health departments today than there were two years ago,” Frieden said, and, as a result our preparations at the state and local levels in detection and response are eroding.

Andrew Weber, the assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, raised the issue of the potential for a “lone wolf” to cause a mass destruction event.

“The potential for a lone wolf bioterrorist to launch such an attack, is not a hypothetical,” Weber said.

Similarly, Nicole Lurie, the assistant Secretary for Preparedness and Response at the Department of Health and Human Services, also expressed concern about facing unanticipated threats. If our detection systems prove to be inadequate to the task, we could find out about a biological attack too late to deal with it in the most efficacious manner, she warned. Globally, efforts to put in place an international detection system to recognize and respond to epidemics is also key to safeguarding the public.

For the most part the conference picked up on and expanded on the work of the 9/11 Commission, which identified biological threats as “the ultimate asymmetrical threat.”

Former Senator Jim Talent, vice chairman of the WMD Center, said that the threat environment remains “dynamic and unpredictable,” and that biological weapons were “the easiest to develop and deploy.”

The final panel, “Transformative Science in Biosecurity,” also emphasized Andrew Weber’s point that “the march of technology, which is a wonderful thing in this area, also carries with it this very substantial risk. You cannot say who will pick up these weapons and use them.”

Tara O’Toole, the Under-Secretary for Science and Technology at the Department of Homeland Security, worried that, “The accessibility of powerful technologies to people who aren’t running an

army, who really are just a group of individuals, is a phenomenon that's going on... These powerful technologies are becoming more and more available and can be used even unintentionally to very detrimental effect on a large scale."

While Craig Venter of the Venter Institute held out the possibility of synthetic DNA leading to vaccines in hours instead of days, weeks or months, and George Poste, the chief scientist at Complex Adaptive Systems Initiative, saw promise in the fusion of molecular biology with computers as a way to speed vaccines and develop therapeutics, most shared the concern that the pace of biological sciences is far outpacing our capacity "to combat malignant uses."

Perhaps of greatest concern was Andrew Weber's fear that "the biggest difficulties associated with biological weapons is that when we talk about them, we're not just talking about terrorist using these weapons like terrorist who might get a nuclear weapon, we're talking about the ability to produce these weapons. And that then gives them the ability to repeatedly attack and reload. The question for our policing agencies is how do we thwart such an attack?"

While a host of responses were offered, including the need for research and budget constancy, enhanced capacity, more realistic planning exercises, the development of balanced portfolios and knocking down the silos that keep government agencies from greater levels of cooperation, the conference made clear that much work remains to be done ([Bio Prep Watch, 2011](#)).

Title: White House On Biological Weapons Convention Review Conference

Date: December 5, 2011

Source: [All Africa](#)

Abstract:

FACT SHEET ON THE SEVENTH REVIEW CONFERENCE OF THE BIOLOGICAL AND TOXIN WEAPONS CONVENTION

"We must come together to prevent, detect, and fight every kind of biological danger whether it is a pandemic like H1N1, a terrorist threat, or a treatable disease." President Obama, United Nations General Assembly, September 22, 2011

Today, the States Parties to the Biological and Toxin Weapons Convention (BWC) are meeting in Geneva for the start of the Seventh Review Conference (RevCon) of the Biological Weapons Convention to evaluate the implementation of the treaty and chart a course for the coming years.

To underscore the importance the United States places on the BWC as a critical tool to help counter biological threats, the President has asked Secretary of State Clinton to lead the United States delegation to the RevCon, where she will deliver the opening statement for the United States on December 7th.

Part of a Broader National Strategy

The BWC is a critical venue for advancing objectives set forth in the President's National Strategy for Countering Biological Threats, which emphasizes the need for multinational collaboration on concrete activities to help counter biological proliferation and bioterrorism.

The three-week BWC Review Conference presents an opportunity for countries to promote real action to improve global response capabilities, reinforce norms against the misuse of biological science, and to help identify and thwart those who would seek to cause harm.

Revitalizing International Efforts to Reduce Biological Threats

The United States believes the BWC should be the premier forum for bringing together the security, health, law enforcement, and science communities to raise awareness of evolving biological risks and

how to best manage them. The U.S. believes that revitalized international efforts and a coordinated series of actions can help reduce the threat of biological attacks.

At the RevCon, the United States will seek the endorsement of the BWC States Parties of a work program for the next five years in three broad areas of work that will greatly enhance international efforts to counter biological threats.

1. First, the United States is asking States Parties to establish an effort to develop constructive ways to strengthen implementation of the BWC and build confidence that all members are living up to their obligations. The dual-use nature of biological work simply makes it too easy to conceal prohibited activities - so the United States has proposed efforts to promulgate legislative and regulatory frameworks, safety and security measures, outreach to stakeholders, improved annual reporting, and options for addressing compliance concerns.

2. Second, the United States is proposing that the RevCon create a working group that will be tasked with taking concrete actions to make the BWC a more robust forum for building global capacities for preventing, detecting, and combating disease outbreaks, regardless of whether they are natural, deliberate or accidental. We need to be prepared, both nationally and internationally, to deal with a biological attack should one occur. The United States seeks to capitalize on synergies between security and public health communities and to do so through the sort of international cooperation called for in the BWC.

3. Third, the United States is asking States Parties to establish a mechanism for assessing developments in science and technology to better understand their potential benefits to the BWC as well as their potential misuse by terrorists or others. It is important for BWC States Parties to have a structured dialogue with the international scientific community on emerging technologies in order to better address the potential for their misuse.

In order to meet these goals, the United States will propose that the BWC RevCon establish a vigorous work program for the next five years that focuses on the common needs and interests of all States Parties in combating biological threats.

Pursuing this robust program will help the international community produce concrete results, thereby enabling successful annual Meetings of States Parties and a robust Eighth BWC Review Conference in 2016 ([All Africa, 2011](#)).

Title: Remarks at the 7th Biological and Toxin Weapons Convention Review Conference

Date: December 7, 2011

Source: [U.S. Department of State](#)

Abstract:

Hillary Rodham Clinton
Secretary of State

Palais des Nations
Geneva, Switzerland

December 7, 2011

Thank you, Mr. President. And I would also like to express my appreciation to all of the delegates and to my colleague, Minister Rosenthal, for his comments. I want to thank the Implementation Support Unit for all the efforts to advance the work here.

I want to start by acknowledging that our countries have accomplished a great deal together under the Biological and Toxin Weapons Convention. One hundred sixty-five states have now committed not to pursue these weapons, and I am delighted to welcome Burundi and Mozambique to the Convention, and I join in urging all states who have not yet done so to join.

President Obama has made it a top goal of his Administration to halt the spread of weapons of mass destruction, because we view the risk of a bioweapons attack as both a serious national security challenge and a foreign policy priority. In an age when people and diseases cross borders with growing ease, bioweapons are a transnational threat, and therefore we must protect against them with transnational action.

The nature of the problem is evolving. The advances in science and technology make it possible to both prevent and cure more diseases, but also easier for states and non-state actors to develop biological weapons. A crude, but effective, terrorist weapon can be made by using a small sample of any number of widely available pathogens, inexpensive equipment, and college-level chemistry and biology. Even as it becomes easier to develop these weapons, it remains extremely difficult – as you know – to detect them, because almost any biological research can serve dual purposes. The same equipment and technical knowledge used for legitimate research to save lives can also be used to manufacture deadly diseases.

So of course, we must continue our work to prevent states from acquiring biological weapons. And one of the unsung successes of the Convention is that it has engrained a norm among states against biological weapons. Even countries that have never joined the Convention no longer claim that acquiring such weapons is a legitimate goal. But unfortunately, the ability of terrorists and other non-state actors to develop and use these weapons is growing. And therefore, this must be a renewed focus of our efforts during the next 14 days, as well as the months and years ahead.

Now, I know there are some in the international community who have their doubts about the odds of a mass biological attack or major outbreak. They point out that we have not seen either so far, and conclude the risk must be low. But that is not the conclusion of the United States, because there are warning signs, and they are too serious to ignore.

Terrorist groups have made it known they would want to acquire and use these weapons. And in the 1990s, the apocalyptic cult, Aum Shinrikyo unleashed two attacks in Tokyo by spraying a liquid containing anthrax spores into the air and unleashing sarin gas into the subway. In 2001, we found evidence in Afghanistan that al-Qaida was seeking the ability to conduct bioweapons attacks. And less than a year ago, al-Qaida in the Arabian Peninsula made a call to arms for – and I quote – “brothers with degrees in microbiology or chemistry to develop a weapon of mass destruction.”

We all have an interest in ramping up our efforts to prevent outbreaks and attacks and then to be prepared to respond if they do occur. The 2001 anthrax attacks in the United States killed five people and sickened 17. More than 10,000 were required to go on to antibiotics. A mass outbreak could cripple an already fragile global economy by cutting off the movement of people, goods, and sparking food shortages. And of course, a victim of an attack could just as easily travel from one country to another.

So shoring up our domestic and international defenses will make it easier to detect and respond. We need public health systems that can quickly diagnose outbreaks, whatever their source, and mobilize the right medical resources and personnel. By making any one country more secure, we make the international community more secure at the same time.

Two years ago, the Obama Administration released our national strategy for countering biological threats, which is a whole-of-government approach designed to protect the American people and improve our global capacity. We support our partners' efforts to meet new international standards in disease preparedness, detection, and response. We are helping make laboratories safer and more secure, engaging 44 countries in these efforts this year. And since 2007, we've conducted more than a dozen workshops to help train public health and law enforcement officials.

But there is still more to do, and I want to briefly mention three areas. First, we need to bolster international confidence that all countries are living up to our obligations under the Convention. It is not possible, in our opinion, to create a verification regime that will achieve this goal. But we must take other steps. To begin with, we should revise the Convention's annual reporting systems to

ensure that each party is answering the right questions, such as what we are each all doing to guard against the misuse of biological materials.

Countries should also take their own measures to demonstrate transparency. Under our new Bio-Transparency and Openness Initiative, we will host an international forum on health and security to exchange views on biological threats and discuss the evolution of U.S. bioresearch programs. We will underscore that commitment by inviting a few state parties to the Convention to tour a U.S. biodefense facility next year, as Ambassador van den IJssel and the UN 1540 Committee did this past summer. And we will promote dialogue through exchanges among scientists from the United States and elsewhere. In short, we are intending and our meeting our obligation to the full letter and spirit of the treaty, and we wish to work with other nations to do so as well.

Second, we must strengthen each country's ability to detect and respond to outbreaks and improve international coordination. As President Obama said earlier this year at the UN, "We must come together to prevent and detect and fight every kind of biological danger, whether it's a pandemic like H1N1, or a terrorist threat, or a terrible disease." Five years ago, 194 countries came together at the World Health Organization and committed to build our core capacities by June 2012, and we should redouble our efforts to meet that goal. We will support the WHO in this area, and I urge others to join us.

Finally, we need thoughtful international dialogue about the ways to maximize the benefits of scientific research and minimize the risks. For example, the emerging gene synthesis industry is making genetic material widely available. This obviously has many benefits for research, but it could also potentially be used to assemble the components of a deadly organism. So how do we balance the need for scientific freedom and innovation with the necessity of guarding against such risks?

There is no easy answer, but it begins with open conversations among governments, the scientific community, and other stakeholders, in this forum and elsewhere. We have recently had our U.S. President's Commission on Bioethics develop ethical principles that could be helpful in this dialogue, and we urge a discussion about them. Ambassador Kennedy and the U.S. team look forward to working with all of you for a strong set of recommendations.

And let me conclude by saying we know the biological threats we face today are new, but our commitment to face threats together is not. More than 85 years ago, after the horrors of World War I, the international community took a stand against the use of poison gases and bacteriological weapons. And nearly a half-century later, that shared commitment brought us together to adopt the Biological Weapons Convention. So in that same spirit, let us move forward to address the challenges we face together in the 21st century.

Thank you very much ([U.S. Department of State, 2011](#)).

Title: Biological Weapons Convention Conference Issues Final Document

Date: December 23, 2011

Source: [Nuclear Threat Initiative](#)

Abstract: The seventh review conference for the Biological Weapons Convention ended on Thursday with a call for all member states to demonstrate their adherence to the accord's rules, the United Nations announced (see [GSN](#), Dec. 7).

Participating states agreed to a revised reporting document that nations would submit annually as a means of promoting confidence that their biological research and development activities have no warfare component.

"The conference recognizes the urgent need to increase the number of states parties participating in confidence-building measures and calls upon all states parties to participate annually," BWC nations said in the final declaration to the 14-day conference in Geneva, Switzerland. They also called on "those states parties, in a position to do so, to provide technical assistance and support, through

training for instance, to those states parties requesting it to assist them to complete their annual confidence-building measures submissions."

A U.N. press. release did not provide details of the updated reporting forms. In speaking to the conference earlier this month, U.S. Secretary of State Hillary Clinton said the revision should "ensure that each party is answering the right questions, such as what we are each all doing to guard against the misuse of biological materials."

The 1975 pact bans the development, production, stockpiling and use of biological materials for nonpeaceful purposes. It has been ratified by 165 nations, while another 12 states are signatories to the convention. Review conferences are scheduled every five years to consider the operation of the convention and possible threats to its strictures.

"In the final declaration, the conference reaffirms that under all circumstances the use of bacteriological (biological) and toxin weapons is effectively prohibited by the convention and affirms the determination of states parties to condemn any use of biological agents or toxins other than for peaceful purposes, by anyone at any time," the conference-ending document states.

Delegates agreed to maintain the "intersessional program" of annual meetings that are held between the five-year review conferences. A total of 10 days would be allowed each year for separate gatherings of experts and officials from member nations. "Standing agenda items" to be discussed annually from 2012 to 2015 are "cooperation and assistance, with a particular focus on strengthening cooperation and assistance under Article 10; review of developments in the field of science and technology related to the Convention; and strengthening national implementation," according to the final report.

Among the matters to be raised within those agenda items are advancements in science and technology that could lead to breaches of the convention, promoting responsible research by the scientific, academic and industry sectors; and augmenting states' implementation of the BWC rules.

"These are the three areas that the United States emphasized when Secretary Clinton spoke to the conference on Dec. 7," Thomas Countryman, assistant secretary of State for international security and nonproliferation, said on Friday. "They were adopted not because the United States pushed them, but because we selected the topics that it is clear the majority of states party agree are essential for future development."

Nations in Geneva also agreed upon the importance of achieving universal membership in the convention.

"The conference underlines that the objectives of the convention will not be fully realized as long as there remains even a single state not party that could possess or acquire biological weapons," they stated. "The conference urges states parties to take action to persuade non-parties to accede to the convention without delay, and welcomes regional initiatives that would lead to wider accession and adherence to the convention."

Participants also approved the creation of a database to "facilitate requests for and offers of exchange of assistance and cooperation among states parties." The BWC Implementation Support Unit was designated to produce and operate the system (United Nations Office at Geneva [release](#), Dec. 22).

"We are happy with the results," Countryman told reporters during a teleconference. "We think they are significant for not only the United States, as we move ahead on advancing the president's national strategy for countering biological threats, but that they have the same value for all of our partners around the world who share this concern about potential biological and toxic threats" ([Nuclear Threat Initiative, 2011](#)).