STATEMENT FOR THE RECORD

for

BIOSCIENCE AND THE INTELLIGENCE COMMUNITY (PART II): CLOSING THE GAP

by

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Chairman Linder, Ranking Member Langevin, Members of the Subcommittee: Good afternoon (morning). Thank you for the opportunity to speak to you today about issues we consider critical to our ability to combat the threat posed by biological weapons. Specifically, I would like to address the role that bioscience plays in our biological warfare (BW) analytic efforts, and describe for you how we have reached out to biological experts and resources beyond the Intelligence Community.

I should emphasize that outreach is an effort we take very seriously and have focused considerable time and energy to strengthen over the past few years. I also realize that probably few of the outside experts who have spoken to you fully understand our capabilities, the nature and scope of our job, or the extent of our efforts to continually improve our technical expertise.

Let me begin by explaining why we value biological expertise so highly.

We have a broad mission to do all we can to protect America from the strategic threat of foreign weapons, including biological weapons. We are concerned about States that may continue to develop or enhance their biological warfare capabilities, and we have assigned a high priority to looking for a possible nexus between biological warfare and terrorism.

- The rapid emergence and spread of new technologies—most of which have legitimate applications in biology and medicine—may accelerate the rate of BW agent development; we worry about the possibility that this will lead to future biothreats that may be even harder to detect and thwart.

Clearly scientific expertise must go hand-in-hand with analytical expertise in assessing current and future biological warfare threats. For example, to analyze the threat posed by foreign offensive programs, we must have the technical know-how to evaluate all aspects of the BW cycle—from research and development through agent production, characterization, formulation, weaponization, testing, and dissemination.

- Strong bioscience skills are needed to understand, among other things, the mechanism by which a given biological agent causes disease, how genetically altering an agent might change its structure or function, the feasibility of combining different agents in a single weapon, possible scenarios for using specific BW agents, the behavior of various agents under adverse environmental conditions, delivery options, routes of exposure, prevention and treatment options, and the clinical effects in exposed victims.

The information we receive from our collectors, more often than not, is not highly technical. However, we often are faced with technical, BW-related questions, and for those we rely on in-house expertise as well as outside bioscience experts.

How exactly do we do this?

We have implemented a two-pronged strategy to ensure that we develop and maintain a critical core of bioscience expertise.

1. The first part of our strategy is the expansion and strengthening of our analytic workforce by ***recruiting and hiring*** the best and the brightest candidates with strong technical credentials, and providing them with ***advanced technical training*** on BW-specific topics.

    - Over the past several years, we have more than doubled our number of BW analysts. 94 percent of our total BW and CW analysts have degrees in relevant technical fields such as Biology, Microbiology, Biochemistry, Pharmacology, Epidemiology, Biomedical Engineering, Chemistry, and Chemical Engineering. 57 percent hold Master's or Ph.D.-level degrees.

    - Not only has this increased our depth on substantive BW issues, it has created numerous opportunities for analysts to go off-line periodically for technical training and to attend scientific meetings and exchanges.

    - We also encourage and pay for analysts to pursue advanced technical degrees.

2. Secondly, we have ***institutionalized outreach to scientific experts***, including some of the highest caliber researchers in the United States. We have done this through senior scientific advisory groups, partnerships with world-class outside experts, bioliterature workshops on cutting-edge research, IC-sponsored conferences on pressing technical issues, formal technical alliances with commercial and industry partners, national and international scientific meetings, and ad hoc consultations with a wide range of technical experts. Let me give you a few examples.

    - Under the auspices of the National Intelligence Council, the Science and Technology Expert Partnership (known as STEP) was established to ensure that scientific and technical analysis in the intelligence community reflects the considered judgment of leading US experts. A primary mission was to find highly qualified outside experts to help intelligence analysts reach judgments in specific areas—which our analysts identify. In 2005, the STEP organized

11 two and three day conferences on topics related to BW. Top researchers spoke to our analysts about subjects such as *Microbial Engineering and Synthesis, Integrated Global Disease Surveillance, Bio-Enabled Nanomaterials, DNA Sequencing and Polymerase Chain Reaction Analysis, and the Applications of Biotechnology Advancements.*

- Over the past few years, we sponsored two highly technical conferences with invited academic, industry, and government experts on Aflatoxins, and Orthopoxviruses. We tailored these conferences so that leading US bioscientists could address very specific BW-related questions from our analysts, and share their insights on some complex and complicated issues.

- We want our analysts to stay current in relevant areas of science. One way we do this is through quarterly bioliterature reviews—sponsored by the IC's Intelligence Technology Innovation Center—at which leading bio-researchers present state-of-the-art briefings in areas of interest to our analysts. Speakers in the past have addressed topics such as aerosol technologies, host-pathogen relationships, and synthetic biology.

- In addition to these more formal mechanisms, we have significantly expanded our outreach to US biotechnology and pharmaceutical companies, and to academia to develop an informal cadre of expertise we can consult on an as-needed basis. Our goal is to increase and strengthen such relationships to help us assess and respond to complex technical issues.

- You have heard from previous speakers about the value of initiatives such as BioChem 20/20, so I'll only say that we strongly support and are helping to guide this effort. This kind of forward-leaning approach—driven by some of the best minds in our bioscience community—is essential in helping us prevent future technology surprise.

- Along these lines, the Intelligence Science Board—chartered in 2002 to advise senior intelligence leaders on emerging science and technology issues of importance to the Community—has been invaluable in creating linkages between intelligence and expert S&T communities outside the government, including bioscientists.

Let me say a few words about our fight against BW and bioterrorism. Our biological warfare analysts face some unique and formidable challenges. First of all, there are few, if any, clear indicators of biological weapons development. BW research and legitimate bioscience look the same and require much of the same

equipment, expertise, and infrastructure. It is difficult and rare to find the "smoking gun."

- You can think of BW analysis as a 1,000 piece puzzle. Each bit of information is a piece of the puzzle, but alone, these pieces probably do not reveal much. Understanding the *science* of BW is a critical part of what we do, but still, it is only a *piece* of the puzzle.

- Our analysis goes beyond the bioscience to consider other factors that may shed light on suspected BW activities. In the case of a State BW program, we consider factors such as motivation and intent, regional security, military and industrial infrastructures, cultural and religious issues, leadership, and political stability, to name a few.

- We spend significant effort working hand-in-hand with collectors to identify approaches for obtaining high-value information on BW programs—which typically is among a country's most tightly-held secrets.

Our goal, and that of others here today, is to obtain better information to fill the critical knowledge gaps about biological threats worldwide. We have taken a number of specific steps toward that end, and will continue to look for ways outside experts may help us further our understanding of the BW threat.

In closing, I would like to say we fully support the efforts of Ambassador Brill and the NCPC to strengthen our work force and create more effective links to outside expertise. We look forward to working closely with the new biological science advisory board in the future.

I thank the Subcommittee for its interest and assistance.