

SUMMARY OF ROUNDTABLE

“Global Status of Strategies for Addressing the Intersection of Science and Security”

American Society for Microbiology Biodefense and Emerging Diseases Research Meeting

February 28, 2012

6:30 – 7:30 p.m.

Washington, D.C.

The American Society for Microbiology’s (ASM) Biodefense and Emerging Diseases Research meeting was held in Washington, D.C., February 26 - 29, 2012. The ASM included a session titled “Global Status of Strategies for Addressing the Intersection of Science and Security” to provide an overview of national and international efforts underway to manage the risks from information, products and technologies resulting from dual use research (DUR) in the life sciences. The moderators were voting members of the National Science Advisory Board for Biosecurity (NSABB). The panel included experts with experience formulating strategies for identifying and managing DUR in their own countries and internationally.

Moderators:

- Dr. Paul Keim, Northern Arizona University, Flagstaff, Arizona, and Acting Chair, NSABB.
- Dr. Stuart Levy, Tufts University School of Medicine, Boston, Massachusetts, and Co-Chair, NSABB International Engagement Working Group.

Panelists:

- Dr. Stuart Levy, Tufts University School of Medicine, Boston, Massachusetts, and Co-Chair, NSABB International Engagement Working Group.
- Dr. Koos van der Bruggen, independent researcher and science writer, The Hague, Netherlands.
- Dr. Catherine Jefferson, senior policy advisor, the Royal Society, London, United Kingdom.
- Dr. Gerald Epstein, biosecurity analyst, Washington, D.C.¹

The hour-long plenary session consisted of brief presentations by Drs. Levy, van der Bruggen, Jefferson, and Epstein, followed by comments and questions from the audience and the panelists themselves.

¹ Dr. Epstein spoke in his individual capacity and was not representing any organizations he has worked for or is currently working for.

Paul Keim – Opening Remarks

Dr. Keim introduced the panelists, and for the purposes of the panel’s discussion, used the NSABB definition for “dual use research”:

Life sciences research yielding new technologies or information with the potential for both benevolent and malevolent applications.

Dr. Keim also distinguished dual use research from that which is of particular concern, using the NSABB’s definition for “dual use research of concern” (DURC):

The small subset of life sciences research with the highest potential for yielding knowledge, products, or technology that could be directly misapplied by others to pose a threat to public health and safety, agricultural crops and other plants, animals, the environment or material.

[Dr. Keim’s slides](#)

Stuart Levy - NSABB and US Government Engagement with the International Scientific Community on Dual Use Research of Concern

Dr. Levy provided a brief overview of the NSABB, beginning with its origins in the 2004 National Academy of Sciences “Fink Report” to its establishment in 2005. He noted that the NSABB was established as an advisory committee to the US government and US scientists, rather than a policymaking body. Dr. Levy described the objectives of the International Engagement Working Group (IWG) of the NSABB, which is charged with raising global awareness of DURC and exchanging information internationally on managing the risks of misuse of information and products from DURC. A brief overview was given of the IWG activities since its inception in 2006, including convening three international roundtables and subsequent webcasts, video-teleconferences, and workshops focused on specific regions of the world.

[Dr. Levy’s slides](#)

Koos van der Bruggen – Biosecurity in the Netherlands: Precaution, Awareness, Prevention and Resilience

Dr. van der Bruggen discussed the Netherlands perspective on dual use research, noting that the Dutch Health Council published a report on enhancing biosecurity measures before 9/11. The Netherlands Royal Academy of Arts and Sciences began development of a national Code of Conduct for Biosecurity following renewed interest in the Biological Weapons Convention. The Code covers research and publication policy, accountability, oversight, communications, accessibility, and specimen shipment and transport. It was developed with a wide range of expertise, including research scientists, and was promoted through an awareness raising campaign. The Dutch Research Council requires that researchers indicate in their funding applications whether the Code applies to their proposed research.

Dr. van der Bruggen agreed with the NSABB position that the main role of a code is to raise awareness, as it would have minimal impact on malicious behavior and is not a substitute for rules and laws. After the Dutch Code was published in 2007, the National Institute for Public Health and Environment began development of a biosecurity toolkit, which will be available soon. He noted that the NSABB recommendation regarding redacting portions of the H5N1 manuscripts was consistent with provisions in the Dutch code. He said that since the recommendation affected research in the Netherlands, it has raised the question of whether there should be more national, regional, or global science advisory boards for biosecurity.

[Dr. van der Bruggen's slides](#)

Catherine Jefferson - *Strategies for Managing Dual Use Research in the United Kingdom: A View from the Royal Society*

Dr. Jefferson described several reports and workshops held by the Royal Society and the InterAcademy Panel (IAP) aimed at raising awareness of DUR. Dr. Jefferson drew particular attention to the 2010 IAP “Workshop on Trends in Science and Technology Relevant to the Biological Weapons Convention,” and noted that the recent decision at the 7th Review Conference to add reporting on science and technology developments to the Convention’s regular intersessional meetings without an agreement for additional intersessional meeting time may make the IAP—an organization connecting 71 national academies—a useful venue for additional discussion.

Dr. Jefferson stated that the Wellcome Trust, the UK Medical Research Council, and the UK Biotechnology and Biological Sciences Research Council have a shared policy statement on misuse of life sciences research which is stated in the application process for awards, and is currently up for review. Dr. Jefferson noted also that the Royal Society’s forthcoming “Science as a Public Enterprise” report would include a discussion on DUR using H5N1 as a case study.

[Dr. Jefferson's slides](#)

Gerald Epstein - *Governance of Dual Use Research*

Dr. Epstein pointed to the desirability of an “oversight at the outset” approach that would minimize the risks that dual use research could be misused while preserving the benefits of such research. However, he recognized challenges in implementing such an oversight paradigm, and in measuring its effectiveness. He noted two distinct but related concerns associated with dual use research. First, the research findings could be misused for harmful purposes by those with malicious intent. Second, concern about dual use research could threaten the public’s trust in science as a self-regulating enterprise with potential negative consequences for scientific progress. He took the position that an effective oversight framework would address both of these concerns.

Dr. Epstein stated that some type of risk assessment was essential to the oversight of dual use research, although he noted that all the unknown and unknowable aspects of such a process

will make it difficult or impossible to develop an objective methodology by which such a process can be codified. Even so, a subjective evaluation is important. At its heart, the function of a dual use oversight process is to subject research proposals and research activities to the informed, independent judgment of people from a variety of perspectives. In particular, participation of those with backgrounds in security, law enforcement, or intelligence is important -- not because of any specific knowledge of security concerns they might bring, but because of the perspective they would bring to recognizing and weighing the possible benefits and risks of research.

Comments, Questions and Answers

A number of points were made during the lively Q&A session, including the following:

- It was emphasized that a risk assessment should “capture informed independent judgment.” Including relevant, multidisciplinary expertise in the process of assessing risks is critical regardless of any procedure or framework structure established.
- Consideration should be given to using the Recombinant DNA Advisory Committee (RAC) as a model for local oversight that includes a mechanism for forwarding cases to the federal level, in this case, for biosecurity review. It was noted that while the Fink Report had used the RAC as its model, Institutional Biosafety Committees (IBCs) might be unable to take on this duty. Also, unlike the RAC, the NSABB was not established as a review body.
- It was noted that the University of Bradford has studied the parallel between the fields of physics and biology, and concluded that life scientists were less willing than physicists to acknowledge the security implications of their work. An analogy was made between the ongoing debate over redacting the H5N1 manuscripts and the early regulation of nuclear technology. It was suggested that there was a stronger parallel with events in 1939, when the nuclear physics community attempted and failed to self-censor fission research, and that classification was more readily accepted by the physics community afterward.
- The Dutch Code of Conduct is a “living” code that can be modified. The code was drafted with an understanding of the need to adapt it to local circumstances and incorporated feedback from workshops. The code is general enough to avoid frequent updating, but because of the H5N1 controversy, the Netherlands Ministries of Health and Science have asked for the Code to be reviewed and possibly modified.
- There was considerable interest in the model of public-private funding arrangements that utilize a common policy for dual use research. It was noted that this model has

proven successful in the UK, and may serve as an example for engaging private funders involved in DUR.

- The current H5N1 controversy has resulted in efforts in several different countries to examine the current status of dual use research policies and recommend new approaches. Some of these activities were reported during the session, and it will be important to monitor these and make sure there is good communication internationally.