# Statement by
# The IAP Biosecurity Working Group
## August 2016

Excellencies, distinguished delegates, ladies and gentlemen:

As the 8th Review Conference of the Biological and Toxin Weapons Convention approaches, the InterAcademy Partnership – a global network of more than 130 academies of science and medicine – and its Biosecurity Working Group want to highlight the ways in which scientists and scientific organizations are contributing to the effective implementation of the Convention. The Working Group, which has been taking part in the BWC processes since its creation in 2004, now includes the national academies of 11 countries from all regions of the world under the chairmanship of the Polish Academy of Sciences.* In addition, other national academies and the IAP itself undertake relevant activities such as education, conferences, joint statements, and reports on topical scientific issues such as synthetic biology, antimicrobial resistance, and gene editing. A side event from 13:00 to 15:00 on Monday, 8 August included presentations from IAP, the academies of Ukraine and Pakistan, and the European Academies Science Advisory Council about some of this work. In addition, a number of studies and events that may be of interest are listed on the back of this statement. Information about them and many other activities may be found on the Biosecurity Working Group website,† as well as on the websites of the sponsoring academies.

The IAP Biosecurity Working Group is perhaps best known in Geneva for the workshops it has organized to review trends in science and technology (S&T) relevant to the operation of the Convention as an independent input to the 6th, 7th, and 8th review conferences and its contributions to the S&T discussions during the Meetings of Experts. The most recent workshop, organized for the Working Group by the US, UK, and Polish academies, was held in Warsaw in September 2015. The report was released during a side event during the Meeting of States Parties last December.‡ As a follow-up, IAP and the UK Royal Society held a meeting during the April Preparatory Committee to discuss options for creating a formal S&T review process within the BWC.§

Education and outreach about biosecurity in the broader context of the responsible conduct of science are other areas of particular interest. In June, IAP, the US National Academy of Sciences and the Hassan II Academy of Sciences and Technology of Morocco collaborated on a workshop to release the Arabic translations of two key IAP reports on responsible science that include discussions of biosecurity (see back page for more information). The workshop also showcased the “active learning” approaches that support the most effective use of such materials in education and outreach.

IAP and its Biosecurity Working Group commend the BWC and the States Parties for providing opportunities for engagement, for example through the topics chosen for the intersessional process

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* The current members of the Working Group are the national academies of Australia, China, Cuba, Egypt, India, Nigeria, Pakistan, Poland, Russia, the United Kingdom, and the United States.
† See http://www.iapbwg.pan.pl/.
‡ The report may be found on the Working Group website and also at https://royalsociety.org/topics-policy/projects/biological-toxin-weapons-convention/.
§ See https://royalsociety.org/topics-policy/projects/biological-toxin-weapons-convention/.

and the support by States Parties for specific projects. The Working Group also encourages the States Parties, as part of the review of the operation of the Convention and consideration of next steps, to take decisions that will sustain and enhance the ways and means for such engagement.

In conclusion, the IAP Biosecurity Working Group wishes you a constructive Meeting and a successful Review Conference.

## Examples of Recent Relevant Activities

- The IAP issued a statement on antimicrobial resistance in 2013 (http://www.interacademies.net/News/PressReleases/22792.aspx) and on synthetic biology in 2014 (http://www.interacademies.net/2952/PressReleases/24059.aspx).

- In 2015, the Pakistan Academy of Sciences released *Dual Use Education Concerns in Biotechnology: A Pakistan Perspective*, which summarizes the educational activities the Academy has undertaken (http://paspk.org/wp-content/uploads/2015/12/Dual-Use-of-Education.pdf).

- On 10 August 2015, the IAP Biosecurity Working Group held a pre-MXP workshop to discuss trends in microbial and biologically-based (bio-based) production. The meeting examined how the design and scale-up of such systems is changing the nature of producing biological and chemical products, what factors are helping to drive this expansion, and what implications these developments may have for the implementation of the BWC. The summary report of the workshop is available on the Working Group website (http://www.iapbwg.pan.pl).

- In October 2015 the European Academies Science Advisory Council (EASAC) released a report on *Gain of Function: Experimental Applications Relating to Potentially Pandemic Pathogens* that offers recommendations to address the debate about risks and benefits of research that modifies viruses to better understand their functioning, in particular their potential to cause pandemics. The report is available at http://www.easac.eu/home/reports-and-statements/detail-view/article/easac-report-1.html.

- From 1-3 December 2015, the Chinese Academy of Sciences, the UK Royal Society, and the US National Academies hosted an International Summit on Human Gene Editing in Washington, DC. Further information, including the statement of the summit planning committee and the archived webcast of presentations, may be found at http://nationalacademies.org/gene-editing/Gene-Edit-Summit/index.htm.

- The US National Academies are also conducting a comprehensive study of the scientific underpinnings of human gene-editing technologies, their potential use in biomedical research and medicine -- including human germline editing -- and the clinical, ethical, legal, and social implications of their use. Further information about the study, which is expected to be released in early 2017, is available at http://nationalacademies.org/gene-editing/consensus-study/index.htm.

- On 13 December 2015, the Royal Netherlands Academy of Arts and Sciences and the US National Academy of Sciences held a pre-MSP workshop on “Implementation in Action: Contributions of ASEAN Scientists and Scientific Organizations to the BWC,” followed by a side event on 14 December to showcase how life scientists and academies, can contribute to the preparation of the 8th Review Conference. Further information on the side event may be found under “Side Events” on the BWC website for the 2015 MSP.

- IAP published a guide in 2012 on *Responsible Conduct in the Global Research Enterprise*. A companion educational handbook, *Doing Global Science: Responsible Conduct in the Global Research Enterprise*, was released in February 2016. Both volumes, which include discussions of biosecurity, may be found at (http://www.interacademycouncil.net/).

- On 10-11 March 2016, the US National Academies hosted a symposium on “Gain-of-Function Research.” The symposium, the second in a series, provided a mechanism to solicit ideas on optimal approaches to ensure effective government oversight of GOF research. The reports of both meetings and additional material are available at http://dels.nas.edu/Past-Events/Gain-Function-Research-Second/AUTO-9-61-70-Q?bname=bls.

- In June, the U.S. National Academies released *Gene Drives on the Horizon: Advancing Science, Navigating Uncertainty, and Aligning Research with Public Values* (http://www.nap.edu/catalog/23405/gene-drives-on-the-horizon-advancing-science-navigating-uncertainty-and). The report outlines the state of knowledge relative to the science, ethics, public engagement, and risk assessment as they pertain to research directions of gene drive systems and governance of the research process. The report offers principles for responsible practices of gene drive research and related applications for use by investigators, their institutions, the research funders, and regulators.