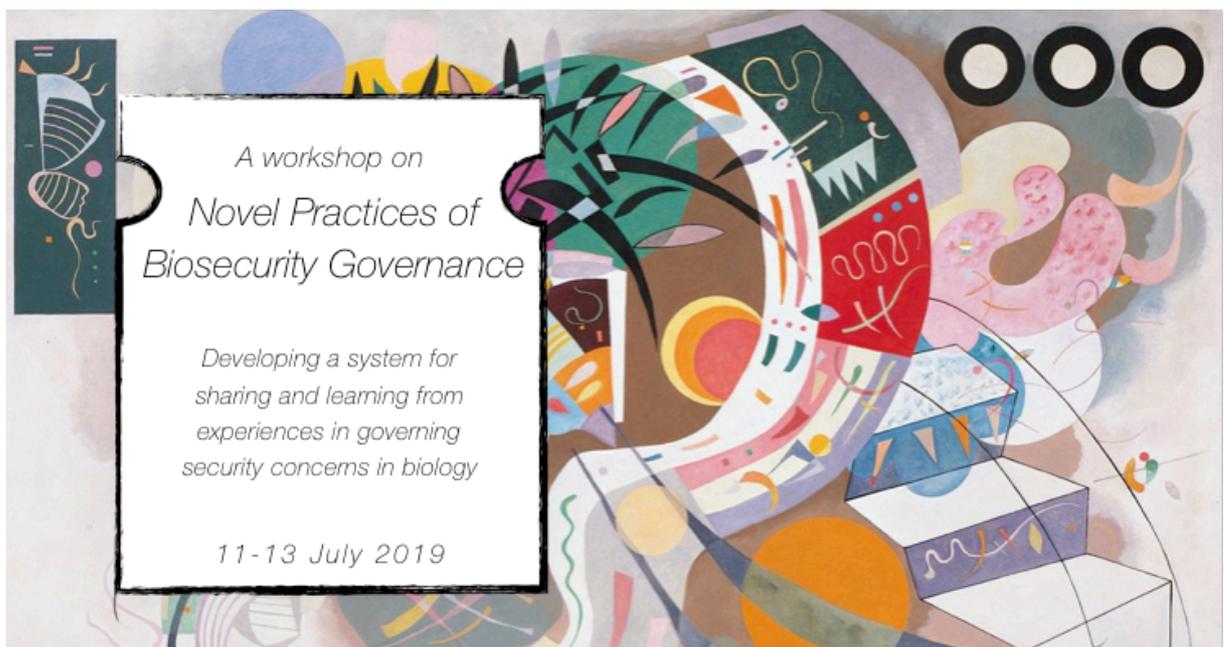


Examples of Biosecurity Governance Information Sharing and Learning Systems Currently Functioning or in Development

This is meant to be an indicative, not exhaustive, collection of current efforts to share and learn from experiences and experiments in biosecurity governance. The intent is to provide the reader with a sense of what is out there to help understand what still needs to be done, and what role each of us might play in that process.

- IEGBBR (International Experts Groups of Biosafety and Biosecurity Regulators)
- GHSA Action Package 3 on Biosafety and Biosecurity and the Joint External Evaluation (JEE) Alliance
- ABSA Select Agent Forum
- BSL4ZNet (Biosafety Laboratory Level 4 Zoonotic Network)
- iGEM (international Genetically Engineered Machines Competition)
- Safety and Security Committee
- UK BSLG (Biosafety Strategic Leadership Group)
- US Federal Bureau of Investigation's Weapons of Mass Destruction Directorate (FBI WMDD)
- Biological Countermeasures Unit (BCU)
- Emerging Leaders in Biosecurity Initiative (ELBI)
- Please think of more!



IEGBBR (International Experts Groups of Biosafety and Biosecurity Regulators)

The International Experts Groups of Biosafety and Biosecurity Regulators (IEGBBR) is an informal group, consisting of government biosafety and biosecurity regulatory officials from 11 countries: Australia, Canada, Denmark, France, Germany, Japan, Netherlands, Singapore, Switzerland, United Kingdom (UK) and the United States of America (USA). The World Health Organization (WHO), World Organization for Animal Health (OIE) and the United Nations participate in the IEGBBR as observers. IEGBBR provides a forum for the sharing of knowledge and experience with regard to current human and animal pathogen biosafety and biosecurity oversight issues. It also promotes international co-operation and alignment among competent regulatory authorities, and contributes to the continued development of knowledge and expertise, in order to strengthen and advance global biosafety and biosecurity regulatory oversight mechanisms. It seeks to support more global or mutually complementary responses to emerging issues and threats posed by human and animal pathogens.

- **Structure:** Multilateral organisation independent of the UN
- **Access:** Restricted to 11 member states authorised personnel
- **Frequency of interaction:** ad hoc emails; meetings every other year; online collaboration tool used for communication and sharing of documents (unclear on update frequency)
- **Online presence:** <https://iegbbr.org/>

GHSA Action Package 3 on Biosafety and Biosecurity and the Joint External Evaluation (JEE) Alliance

The Global Health Security Agenda's (GHSA) Action Package 3 on Biosafety and Biosecurity is helping countries implement a comprehensive, sustainable and legally embedded national oversight program for biosafety and biosecurity, including the safe and secure use, storage, disposal, and containment of pathogens found in laboratories and a minimal number of holdings across the country, including research, diagnostic and biotechnology facilities. They hold monthly teleconferences and annual in-person meetings to discuss progress on Action Package deliverables, coordinate next steps, and to identify opportunities for collaboration. The formalisation of this coordination (e.g. developing an online information platform) is a goal for the next few years. The effort is led by Canada, Denmark, Kenya, Peru, Portugal, and Spain, with contributing countries Azerbaijan, Bangladesh, Cote d'Ivoire, Finland, Germany, Ghana, Jordan, Republic of Korea, Saudi Arabia, Singapore, United Kingdom, and the United States. It also involves FAO, IAEA, INTERPOL, OIE, WHO as contributing international organisations. Country assessments are done largely through the Joint External Evaluation (JEE) Alliance, which any state is welcome to join.

- **Structure:** under GHSA
- **Access:** Any state can request to join the GHSA (currently over 50), the JEE Alliance (currently 72). It is also apparently possible for non-governmental stakeholder organisations to apply to join GHSA as well.
- **Frequency of interaction:** The JEE meets 2-3 times a year and meetings are open to all actors interested in health security capacity building. An online platform for knowledge sharing closed to the GHSA is currently being explored.
- **Online presence:** <https://www.ghsagenda.org/packages/p3-biosafety-biosecurity>
<https://www.jeealliance.org/>

ABSA Select Agent Forum

The American Biological Safety Association (ABSA) International has worked with the US Federal Select Agent Program since summer of 2016 to provide a space for approved individuals from select agent registered entities to ask questions, discuss challenges and successes, and share information with each other as well as host webinars. The Select Agent (SA) Forum has roughly 345 vetted members. The total number of active members varies as new people are added or removed from select agent research, the number of participants active in the SA Forum varies greatly for a multitude of reasons. Participation can vary depending on issues related to the sharing of what may be considered sensitive or privileged information or fear of asking what could be seen as a silly question. ABSA International compiles anonymous feedback from the members of the SA Forum and provides it to the Federal Select Agent Program on an annual basis to help it improve.

- **Structure:** Online secure information sharing platform
- **Access:** Individuals at select agent registered entities in the US may email info@absa.org to request access. Currently 345 vetted members. The vetting process requires ABSA to confirm with the Federal Select Agent Program that the person is an active, approved member of a registered program. It does not contain federal officials in the forum itself, to the best of our knowledge.
- **Frequency of interaction:** Variable engagement on forum, but around 1-2 new topics a month. Yearly data scraping by ABSA International that is compiled, anonymised, and fed back into the US Federal Select Agent Program.
- **Online presence:** news release of its initiation in 2017 <https://absa.org/new-sap/>

BSL4ZNet (Biosafety Laboratory Level 4 Zoonotic Network)

BSL4ZNet brings together 11 high consequence animal health and public health laboratories from Australia, Canada, Germany, the UK, and the USA to strengthen partnerships between individual laboratories and build an integrated capacity to respond to high consequence bio-threats. The BSL4ZNet works on five strategic focus areas: knowledge sharing, institutional cooperation, international response, scientific excellence, and training world-class personnel to achieve this goal. In its first year of operation, BSL4ZNet has made important gains by producing a catalogue of training opportunities for high containment laboratory personnel, orchestrating a laboratory exchange program, and hosting a series of presentations by subject matter experts. The Canadian Food Inspection Agency and the Network partners continue to conduct targeted research on high consequence pathogens and development of new diagnostic tools. The BSL4ZNet has commenced work on compiling international best practices in the management of BSL4 laboratories, conducting a gap analysis concerning research and diagnostics for zoonotic pathogens of interest, and organizing a workshop on refining post-mortem procedures in high containment. Future work includes conducting a simulation exercise to test the Network preparedness in terms of responding to an international disease event. BSL4ZNet provides a platform for animal and public health laboratories to work in synergy and amplify their existing capabilities to better prepare and respond to bio-threats.

- **Structure:** a secure web “BSL4ZNet Collaboration Centre” on the Canadian Network for Public Health Intelligence (CNPHI)
- **Access:** restricted to 11 high consequence animal health and public health laboratories. Around 60 active participants as of 2017.

- **Frequency of interaction:** quarterly steering committee meetings; bi-weekly working group meetings; always-available online platform
- **Online presence:** www.oie.int/eng/BIOTHREAT2017/posters/14_CEMMA-poster.pdf

iGEM (international Genetically Engineered Machines Competition) Safety and Security Committee

iGEM is an international student competition to develop novel genetic constructs, which gathers around 6000 students and community lab members from 40+ countries each year to compete for prizes and awards. It has a dedicated Safety and Security Program, which reviews all the projects and genetic parts used in the competition. External contractors assess whether relevant risks have been identified and appropriate measures in place to manage them. Substantive issues are elevated to the competition's own Safety and Security Committee (SSC), comprised of regulators (present and past), biosafety and biosecurity professionals, bioethicists, and animal use professionals from every inhabited continent. The committee members then bring to bare their expertise from their home institutions to work with teams to resolve concerns. iGEM takes safety and security very seriously and has sanctioned teams, including disqualification, for shortcomings. It also rewards and encourages excellence. It acts as both an innovator and sandbox for biosafety and biosecurity innovation. Each year, the program undergoes a self-evaluation through its committee and has significantly more ability to iterate on its design than state-based oversight processes.

- **Structure:** iGEM headquarters does initial reviews of iGEM team projects and compiles those reviews to submit to the Safety and Security Committee (SSC), highlighting potentially problematic topics. The Committee then collaborates on developing a response, and iterating with teams on a plan of action. Many problems that the SSC deals with are international in nature because the competition is international.
- **Access:** All iGEM teams are required to fill in forms that are then viewable to the SSC. Anyone can apply to become a member of the SSC
- **Frequency of interactions:** SSC gets emails from headquarters on an ad hoc basis, but generally 1 email every 1-2 weeks seeking input during “high season” when teams are building their projects, which generates a chain of responses. Yearly reviews of the Safety and Security Program.
- **Online Presence:** igem.org

UK BSLG (Biosafety Strategic Leadership Group)

The UK's Biosafety Strategic Leadership Group began in April 2018 for three purposes. First to be a forum for the regulated and regulators in the bioeconomy sector to build and maintain a strategic dialogue on leadership in biosafety risk management, to ensure that the UK has an effective and agile regulatory framework for high consequence biological agents. Second, to enable early insight into potential emergent biosafety risks and regulatory issues for the bioeconomy sector from science, technology, business and government, nationally and internationally. And third, to facilitate mechanisms for sharing best practice within the sector, championing continual improvement in risk performance within the sector, and fostering the development of common training frameworks and competency standards within the sector. It serves to meet the requirement for the Health and Safety Executive to conduct stakeholder engagement in the process of reforming its oversight capacity.

- **Structure:** An in-person forum
- **Access:** Invite only. Its membership consists of Chief Executive Officers / Directors or their equivalents from organisations working with high consequence biological agents across the bioeconomy sector, plus senior managers from the Chemicals, Explosives & Microbiological Hazards Division of the Health & Safety Executive. Membership stands at 21 people as of May 2019.
- **Frequency of interaction:** Three times per year in varying locations in the UK
- **Online presence:** none

US Federal Bureau of Investigation's Weapons of Mass Destruction Directorate (FBI WMDD) Biological Countermeasures Unit (BCU)

The Federal Bureau of Investigation's (FBI) Weapons of Mass Destruction Directorate (WMDD) has its beginning in the Defense Against Weapons of Mass Destruction Act of 1996, in which the FBI was included as a key United States (U.S.) federal agency charged with preventing WMD attacks. In 2006, the WMD Directorate was formed by the consolidating Special Agents, Intelligence Analysts, and subject matter experts in life and physical sciences under one structure. Within the WMD Directorate organizational structure is the Biological Countermeasures Unit (BCU) with a focus on the prevention of illicit acquisition and misuse of biological material, information, technology, and expertise for bioterrorism. (The WMD Directorate also has countermeasures units that focus on prevention from the misuse of chemical, radiological, and nuclear materials, technologies, information, and expertise.) The BCU mission also aligns with the 2004 National Academies report Biotechnology in an Age of Terrorism (known as the "Fink Report") which recommended "that the national security and law enforcement communities develop new channels of sustained communication with the life sciences community about how to mitigate the risks of bioterrorism." BCU's Biosecurity Program and the Advanced & Emerging Biotechnology Program address the traditional and emerging threats arising from advances in research and biotechnology innovations. These, and other BCU programs, are advanced through the WMD Coordinators Program, Special Agents who are certified after a validated WMD training curriculum, in each of the FBI's 56 Field Offices across the U.S. and three specially designated Legal Attachés abroad. The Biosecurity Program includes engagements with the life science and associated disciplines with frequent visits to industry and academic institutions and public health local and state law enforcement, and first response agencies, to raise awareness about threats to U.S. national security. These efforts take a balanced approach to developing mitigation strategies and plans that include establishing notification protocols to report suspicious activities and behaviors and developing tripwires – and an early mechanism to respond to an emerging situation with potential risks and consequences. The FBI believes this balanced approach is absolutely essential in establishing proper biosecurity measures without undue hindrance to the progress of scientific understanding and development; Science and science innovation support public health resilience, economic growth, and many other aspects of everyday life, all of which are pillars of national security. The WMD Directorate also advances prevention activities with international partners by supporting international WMD capacity building, support the development of plans and policies at strategic and operational levels, developing partnerships, training, and conducting outreach endeavors. By improving WMD security on a global level, the Directorate protects U.S. interests abroad and keeps WMD threats outside U.S. borders and partner countries.

- **Structure:** Formal organizational unit in the FBI that functions as a biosecurity expert community that can be consulted

- **Access:** anyone with a biosecurity concern is invited to call their local WMD Coordinator
- **Frequency of interaction:** variable. WMD Coordinators make routine visits to local laboratories.
- **Size of group:** Several WMD specialists at FBI Headquarters, one WMD coordinator in each of the 56 field offices and three Legal Attachés (Legat) offices overseas with a regional WMD Legat Assistant
- **Online presence:** <https://www.fbi.gov/investigate/wmd>

Emerging Leaders in Biosecurity Initiative (ELBI)

The Emerging Leaders in Biosecurity (ELBI) Fellowship inspires and connects the next generation of leaders and innovators in the biosecurity community. This highly-competitive, part-time program is an opportunity for talented career professionals to deepen their expertise, expand their network, and build their leadership skills through a series of sponsored events coordinated by the Johns Hopkins Center for Health Security. This fellowship boasts more than 100 alumni who represent government, defense, private industry, science, law, public health, medicine, global health, journalism, the social sciences, and academia. ELBI Fellows learn more about the different aspects of biosecurity policy and practice, identify career development opportunities in the biosecurity field; network with senior biosecurity leaders from the public and private sector, connect with other talented professionals working on important biosecurity initiatives, refine and develop key professional skills to advance your career, and access resources and participate in events focused on the most current, relevant topics in biosecurity.

- **Structure:** Yearly Fellowship including workshops and networking in Washington, DC and other sites in and outside the US.
- **Access:** Open to US, UK, or Canadian Citizens or US Permanent Residents/ Student visas who are in a Master's/PhD program or have at least 3 years of professional experience in national security, public health, medicine, biotechnology, or a related field.
- **Frequency of interaction:** a series of workshops and networking events that leads to a sustained bilateral interaction between participants
- **Size of group:** 28 Fellows a year
- **Online presence:** <http://www.centerforhealthsecurity.org/our-work/emergingbiolenders/>