CATALOGUE OF CIVIL SOCIETY ASSISTANCE TO STATES PARTIES

In Support of Article X of The Biological Weapons Convention

Year 2020

PROJECT DESCRIPTION

We are pleased to present the second update to an annual catalogue of civil society assistance programs, to highlight contributions to the BWC and States Parties, informing interested parties of civil society's contributions to enhance biological safety and security. By providing a uniform product, we hope State Parties will be able to easily identify programs, experts, and organizations. In addition to organization and project descriptions, the information provided in this catalogue includes points of contact for each program to facilitate stronger connections between civil society and State Parties in need of assistance.

This catalogue is compiled by Georgetown University Center for Global Health Science and Security and The Henry L. Stimson Center. Material contained in this catalogue will be also included in the Stimson Center's UNSC Resolution 1540 Assistance Support Initiative (ASI) Database, available at https://1540assistance.stimson.org.

Catalogue compiled by:

GEORGETOWN UNIVERSITY
Georgetown University Medical Center
Center for Global Health Science and Security

STIMSON

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Geneva Centre for Security Policy (GCSP)

Type of Organization: Academia

Organization Description: The GCSP is an international foundation that provides executive education, dialogue, and research on all aspects of security and peace.

Organization Location: Geneva, Switzerland

For more information please visit: www.gcsp.ch

Project Name: Outreach Seminars on the Biological Weapons Convention (BWC)

Project Type: Outreach/Awareness-Raising; Conference/Workshop

Geographical Focus: Worldwide

Project Description: Regular seminars and workshops organised in partnership with the Implementation Support Unit of the BWC for diplomats before meetings of States Parties or meetings of experts.

Funding Partner(s): BWC Implementation Support Unit, BWC Member States

Other Implementing Partner(s): BWC Implementation Support Unit

Project Status: Ongoing

Point(s) of Contact:
Marc Finaud, Head of Arms Proliferation
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+41 22 730 96 41

The Verification, Research, Training and Information Centre (VERTIC)

Type of Organization: Non-Profit; Research and Assistance Provider

Organization Description: Established in 1986, VERTIC is a London-based non-profit organisation devoted exclusively to verification, implementation, and compliance with respect to international agreements. Our primary focus is on agreements concerning non-proliferation and disarmament of nuclear, biological and chemical weapons and the security of related materials, with emerging work in areas such as the weaponisation of new technologies and the International Health Regulations. We carry out technical, policy-focussed research to inform our engagement with a wide range of stakeholders - governments, international organisations, civil society and the private sector - and we provide technical assistance, tools and training within our mandate. VERTIC is a charity and company limited by guarantee registered in England and Wales.

Organization Location: London, United Kingdom

For more information please visit: https://www.vertic.org/

Project Name: Legislative Assistance for National Implementation of the BTWC and CWC

Project Type: Biological Weapons Nonproliferation; Biosafety/Biosecurity; Chemical Weapons Nonproliferation; Outreach/Awareness-Raising; Development of Laws/Regulations/Guidelines; Needs Assessment/Planning; Development of Resources/Tools/references; Conference/Workshop

Geographical Focus: Worldwide

Project Description: This project aims to strengthen the universalisation and implementation of international instruments for the non-proliferation of chemical and biological weapons and the security of related materials in national legal frameworks, including the Biological and Toxin Weapons Convention (BTWC), the Chemical Weapons Convention and related provisions of UN Security Resolution (UNSCR) 1540.

Funding Partner(s): Norwegian Ministry of Foreign Affairs

Other Implementing Partner(s): N/A

Project Status: Active

Point(s) of Contact:
Dr Sonia Drobysz, Programme Director for National Implementation
sonia.drobysz@vertic.org

The Center for Biodefense, Law, and Public Policy
Texas Tech University

Type of Organization: Academia; Think Tank

Organization Description: Biosecurity and biodefense law focus in teaching and research. Established the only law journal to focus on this area of law, the *Journal of Biosecurity, Biosafety & Biodefense Law* since 2008 (DeGruyter). Only law school in the US to offer a concentration in Biosecurity Law.

Organization Location: Lubbock, Texas, USA

For more information please visit: http://www.ttu.edu/biodefense

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Project Name: *Journal for Biosecurity, Biosafety and Biodefense Law*

Project Type: Development of Laws/Regulations/Guidelines

Geographical Focus: Worldwide

Project Description: The Journal provides both a legal and scientific perspective on current issues concerning bioterrorism and emerging infectious diseases.

Funding Partner(s): N/A

Other Implementing Partner(s): N/A

Project Status: Ongoing

Point(s) of Contact:
Dr. Victoria Sutton, Director, Center for Biodefense, Law, and Public Policy
Vickie.Sutton@ttu.edu
(806) 834-1752

InterAcademy Partnership (IAP)

Type of Organization: National Academy

Organization Description: Under the umbrella of the InterAcademy Partnership (IAP), 143 national, regional and global member academies work together to support the vital role of science in seeking evidence-based solutions to the world's most challenging problems. In particular, IAP harnesses the expertise of the world's scientific, medical and engineering leaders to advance sound policies, improve public health, promote excellence in science education, and achieve other critical development goals.

Organization Location: Trieste, Italy

For more information please visit: www.interacademies.org

Project Name: IAP Biosecurity Working Group

Project Type: Biosafety/Biosecurity; Outreach/awareness-raising; Knowledge sharing; Development of resources/tools/references; Development of laws/regulations/guidelines

Geographical Focus: Worldwide

Project Description: The IAP General Assembly agreed to establish a Biosecurity Working Group in 2003, designed especially to link with the Biological and Toxin Weapons Convention (BWC). Activities include the promotion of responsible research practices and links with the Organization for the Prohibition of Chemical Weapons (OPCW). A new IAP Biosecurity Working Group (BWG) was established in 2020 following a process of nominations of suitable expert by member academies. Current BWG members are from Argentina, Brazil, China, Egypt, Georgia, Germany, Ghana, Italy, Pakistan, Philippines, Russia, South Africa, Trinidad & Tobago, the United Kingdom and the United States.

Funding Partner(s): InterAcademy Partnership

Other Implementing Partner(s): N/A

Project Status: Active

Point(s) of Contact:
Peter McGrath, IAP Coordinator
mcgrath@twas.org
+39 040 2240 571

Biodefense Graduate Program
Schar School of Policy and Government, George Mason University

Type of Organization: Academia

Organization Description: George Mason University's Biodefense Graduate Program, which offers MS and PhD degrees and graduate certificates, produces the next generation of biodefense and global health security professionals and scholars. The multidisciplinary curriculum provides students with a foundation in the science and policy needed to prevent, prepare for, and respond to large-scale threats to health security, such as pandemics, weapons of mass destruction (including biological weapons), terrorism, and natural disasters. The program provides students with the knowledge and skills to assess the risks posed by natural and man-made biological threats, bridge the gap between science and policy, and develop strategies for reducing these risks to national and global security. The MS can also be pursued entirely online. The online biodefense courses are offered in an asynchronous format for maximum flexibility. All of the biodefense courses are offered in-person and online on a rotating basis. In 2019, U.S. News and World Report ranked the Schar School as the No. 2 graduate school in the country for programs in homeland and national security. This cutting-edge academic program is for individuals interested in working on critical issues at the nexus of health, science, and security at the local, national, and international level.

Organization Location: Arlington, VA, USA

For more information please visit: https://schar.gmu.edu/biodefense-programs

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Project #1 Name: Master of Science in Biodefense

Project Type: Biological Weapons Nonproliferation; Biosafety/Biosecurity; Other Health Security; Chemical Weapons Nonproliferation; Chemical Security; Nuclear; Radiological; Export Control/Border Security; Preparedness/response (outbreak); Knowledge sharing; Train the Trainer; Outreach/awareness-raising

Geographical Focus: Worldwide

Project Description: The Master of Science in Biodefense, offered by the Schar School of Policy and Government, provides students with the knowledge and analytic skills to assess the risks posed by natural and man-made biological threats, weapons of mass destruction and terrorism, and to develop strategies for reducing these risks to national and international security. This 36-credit degree is interdisciplinary with core courses on the biology and epidemiology of key biological threats, US and global health security programs and policies, and theory and methods. The broad array of electives

offered by the program and the Schar School allow students to tailor their graduate education to focus on their academic and professional needs. At the end of the programs, students take a Capstone class where they write a research paper equivalent in length and quality to a peer-reviewed journal article. The MS can also be pursued entirely online. The online biodefense courses are offered in an asynchronous format – instructors make the class instruction available online for students to access at any time from any location. All of the biodefense courses are offered in-person and online on a rotating basis.

Funding Partner(s): N/A

Other Implementing Partner(s): N/A

Project Status: Active

Point(s) of Contact:
Gregory D. Koblentz, Director, Biodefense Graduate Program
gkoblent@gmu.edu
+1 (703) 993-1266

Project #2 Name: PhD in Biodefense

Project Type: Biological Weapons Nonproliferation; Biosafety/Biosecurity; Other Health Security; Chemical Weapons Nonproliferation; Chemical Security; Nuclear; Radiological; Export Control/Border Security; Outreach/awareness-raising; Preparedness/response (outbreak); Knowledge sharing

Geographical Focus: Worldwide

Project Description: The PhD in Biodefense provide students with a background in the science and technology of biodefense and a specialization in international security, terrorism and homeland security, or science and technology of WMD. The degree is designed to prepare graduates to be scholars and/or professionals in the fields of biodefense and global health security. The core curriculum is similar to that of the MS with additional theory and methods requirements. The degree consists of 72 credits with up to 30 credits transferable from previous graduate work.

Funding Partner(s): N/A

Other Implementing Partner(s): N/A

Project Status: Active

Point(s) of Contact:
Gregory D. Koblentz, Director, Biodefense Graduate Program
gkoblent@gmu.edu
+1 (703) 993-1266

Project #3 Name: Workshop on Pandemics, Bioterrorism, and Global Health Security

Project Type: Biological Weapons Nonproliferation; Biosafety/Biosecurity; Other Health Security; Outreach/awareness-raising; Preparedness/response (outbreak); Needs Assessment/planning; Conference/Workshop; Train the Trainer; Knowledge sharing

Geographical Focus: Worldwide

Project Description: Threats to global health security continue to evolve due to the changing nature of conflict, advances in science and technology, globalization, and the growing threat posed by emerging infectious diseases and pandemics. Pandemics, Bioterrorism and Global Health Security: From Anthrax to Zika is a three-day, non-credit summer workshop designed to introduce participants to the challenges facing the world at the intersection of national security, public health, and the life sciences. The workshop faculty are internationally recognized experts from the government, private sector, and academia who have been extensively involved with research and policy-making on public health, biodefense, and national security issues.

Funding Partner(s): N/A

Other Implementing Partner(s): N/A

Project Status: Upcoming; Planned for July 2021

Point(s) of Contact:
Gregory D. Koblentz, Director, Biodefense Graduate Program
gkoblent@gmu.edu
+1 (703) 993-1266

Center for Security Studies (CSS), ETH Zürich

ETH zürich Center for Security Studies

Type of Organization: Academia; Think Tank

Organization Description: The Center for Security Studies (CSS) at the Swiss Federal Institute of Technology Zurich (ETH Zürich) is a center of competence for Swiss and international security policy. In close collaboration, CSS and Spiez Laboratory (the Swiss Federal Institute for NBC-Protection and designated OPCW laboratory) established the biannual workshop series "Spiez CONVERGENCE" in 2014. Recognizing the increasing convergence of chemistry, biology and other technologies, the workshop aims to promote exchange and discussion about the latest advances potentially relevant for the Chemical and Biological Weapons Conventions by bringing together experts from research, industry and policy making. Additionally, CSS runs a seminar at ETH Zürich to raise awareness for the dual-use dilemma amongst life science students.

Organization Location: Zürich, Switzerland

For more information please visit: https://css.ethz.ch

Project Name: Spiez CONVERGENCE

Project Type: Conference/Workshop

Geographical Focus: Worldwide

Project Description: The workshop series Spiez CONVERGENCE reviews the latest advances at the intersection of chemistry and biology and brings together experts from research, industry and policy making to discuss potential implications for the Chemical, and Biological and Toxin Weapons Conventions.

Funding Partner(s): Swiss Federal Department of Foreign Affairs, Division for Security Policy; Swiss Federal Department of Defence, Civil Protection and Sports, International Relations Defence.

Other Implementing Partner(s): N/A

Project Status: Ongoing

Point(s) of Contact:
Dr. Michèle Gemünden, Senior Researcher, Swiss and Euro-Atlantic Security Team, CSS
michele.gemuenden@sipo.gess.ethz.ch

Biosecurity Research Initiative
St. Catharine's College, University of Cambridge

Type of Organization: Academia

Organization Description: The Biosecurity Research Initiative at St Catharine's is a knowledge hub set up to provide cutting-edge evidence-based information about existing and emerging biosecurity risks and interventions. We work across the fields of conservation and environmental management, as well as human, animal and plant health. Our research includes risks from naturally occuring organisms, accidental releases or unintended consequences of novel organisms, and more traditional security concerns, such as the deliberate use of biological agents, scientific knowledge, and related technologies for harmful purposes. The BioRISC initiative uses an innovative combination of research methods to generate, collate, and assess evidence across the different domains of biosecurity. Our core methods include horizon scanning, expert elicitation, fault tree analysis, and interactive evidence synthesis (a novel method that we are developing using dynamic meta-analysis).Our research projects bring together leading scientific experts, technology developers, and policy makers, to shape the biosecurity research agenda and provide a robust evidence base to support decision makers.

Organization Location: Cambridge, United Kingdom

For more information please visit: https://www.caths.cam.ac.uk/research/biorisc

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Project Name: Biosecurity Research Initiative at St Catharine's College (BioRISC)

Project Type: Biosafety/Biosecurity; Other Health Security; Export Control/Border Security; Collaborative research projects; Development of laws/regulations/guidelines; Conference/Workshop; Knowledge sharing; Development of resources/tools/references

Geographical Focus: Worldwide; Europe

Project Description: Horizon-Scanning for forthcoming problems – BioRISC, in collaboration with the Centre for the Study of Existential Risk, have conducted two relevant horizon scanning exercises covering emerging issues in biotechnology, biosecurity and the life sciences. Our bioengineering horizon scan was presented at a BWC side event in 2017. Our horizon scanning work brings together biosecurity experts, scientists and technologists, and policy makers to identify significant future issues for biosecurity policy and practice.

Identifying priorities for research and policy – We used a similar process of expert elicitation with researchers and decision-makers to develop a targeted agenda identifying the questions most critical to effective and coordinated progress in different disciplines of biological security. Drawing on an

interdisciplinary expert group of experts from academia, industry and the UK government, we identified 80 key research questions for UK biosecurity, spanning bioengineering; communication and behaviour; disease threats (including pandemics); governance and policy; invasive alien species; and securing biological materials and securing against misuse. These questions can help target research resources and inform the implementation of the UK Biological Security Strategy.

Funding Partner(s): The David and Claudia Harding Foundation

Other Implementing Partner(s): Centre for the Study of Existential Risk (CSER), University of Cambridge

Project Status: Active

Point(s) of Contact:
Dr Lalitha Sundaram, Research Associate, Centre for the Study of Existential Risk; Postdoctoral Associate, Jesus College, University of Cambridge
LS299@cam.ac.uk

Dr Thomas Hobson, Postdoctoral Research Associate, Centre for the Study of Existential Risk;
TCH46@cam.ac.uk

Centre for the Study of Existential Risk (CSER)
University of Cambridge

Type of Organization: Academia

Organization Description: The Centre for the Study of Existential Risk (CSER) is an interdisciplinary research centre within the University of Cambridge dedicated to the study and mitigation of risks that could lead to human extinction or civilisational collapse. Biological technologies and the life sciences are a key focus of our research. Our work has involved horizon-scanning for emerging issues in biotechnology, analysing gene drives, and debating gain-of-function research. On biosafety, we are developing strategies for promoting responsible research and innovation in collaboration with academics, biotech companies, and DIY-bio communities. On biosecurity, we have developed a collaborative strategy of next steps to support the Biological Weapons Convention.

Organization Location: Cambridge, United Kingdom

For more information please visit: www.cser.ac.uk

Project #1 Name: Bioengineering Horizon Scans

Project Type: Biosafety/Biosecurity; Other Health Security; Collaborative research projects; Outreach/awareness-raising; Development of resources/tools/references; Conference/Workshop; Knowledge sharing

Geographical Focus: Worldwide

Project Description: CSER has conducted two bioengineering horizon scans. These exercises drew on international expertise to identify key future topics of concern for biosecurity and governance of bioengineering. These issues ranged from the political (the regulation of genomic data, increased philanthropic funding and malicious uses of neurochemicals) to the environmental (crops for changing climates and agricultural gene drives). The early identification of such issues is relevant to researchers, policy-makers and the wider public. The 2017 scan, a trans-atlantic snapshot, was presented at a Side Event to the BWC MSP.

Funding Partner(s): Templeton World Charity Organization

Other Implementing Partner(s): Biosecurity Research Initiative at St Catharine's College (BioRISC), University of Cambridge

Project Status: Available

Point(s) of Contact:
Dr Lalitha Sundaram, Research Associate, Centre for the Study of Existential Risk; Postdoctoral Associate, Jesus College, University of Cambridge
LS299@cam.ac.uk

Dr Thomas Hobson, Postdoctoral Research Associate, Centre for the Study of Existential Risk
TCH46@cam.ac.uk

Project #2 Name: Regulation and Responsible Innovation in Synthetic Biology

Project Type: Biosafety/Biosecurity; Export Control/Border Security; Technical Training; Collaborative research projects; Development of laws/regulations/guidelines; Conference/Workshop

Geographical Focus: Worldwide

Project Description: Our research in the area of synthetic biology investigates the frameworks that govern genetically-modified organisms, and explores the challenges that are being faced in this area. This includes formal regulatory frameworks as well as normative ones, such as concepts of Responsible Research and Innovation.

Funding Partner(s): Schmidt Sciences (a program of the Eric and Wendy Schmidt Fund for Strategic Innovation)

Other Implementing Partner(s): N/A

Project Status: Ongoing

Point(s) of Contact:
Dr Lalitha Sundaram, Research Associate, Centre for the Study of Existential Risk; Postdoctoral Associate, Jesus College, University of Cambridge
LS299@cam.ac.uk

Dr Thomas Hobson, Postdoctoral Research Associate, Centre for the Study of Existential Risk
TCH46@cam.ac.uk

Project #3 Name: Cyber Biosecurity and Military Applications of Emerging Biotechnologies

Project Type: Biosafety/Biosecurity; Site-specific equipment/facility improvements; Development of laws/regulations/guidelines; Collaborative research projects; SOP development; Needs

Assessment/planning; Conference/Workshop; Knowledge sharing; Biological Weapons Nonproliferation

Geographical Focus: Worldwide

Project Description: As the digital/informatic and biological realms move ever closer together, their intersection remains understudied. Our new research theme explores the interface between cybersecurity and biosecurity: to identify gaps or areas where this intersection might result in risk-multipliers, and to develop common methodologies and frameworks for the two fields to work together most effectively. Our work on the military application of emerging biotechnologies aims to understand how military research and investment in emerging biological sciences might shape the future global security environment.

Funding Partner(s): Isaac Newton Trust; The Libra Foundation

Other Implementing Partner(s): Biosecurity Research Initiative at St Catharine's College (BioRISC), University of Cambridge

Project Status: Ongoing

Point(s) of Contact:
Dr Thomas Hobson, Postdoctoral Research Associate, Centre for the Study of Existential Risk
TCH46@cam.ac.uk

Dr Lalitha Sundaram, Research Associate, Centre for the Study of Existential Risk; Postdoctoral Associate, Jesus College, University of Cambridge
LS299@cam.ac.uk

King's College London

Type of Organization: Academia

Organization Description: Established in 1829, King's College London is a public research university located in London, United Kingdom. King's strategic vision 2029 lays out the university's strategy to make the world a better place. King's strategic priorities are to: educate to inspire and improve; research to inform and innovate; serve to shape and transform; deliver a civic university at the heart of London; and provide an international community that serves the world.

Organization Location: London, United Kingdom

For more information please visit:
www.kcl.ac.uk/warstudies
https://www.kcl.ac.uk/csss
www.kcl.ac.uk/ghsm
https://www.kcl.ac.uk/research/conflict-health-research-group

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Project Names: Biological Disarmament and Non-Proliferation; Emerging Technologies, Governance, & Responsible Innovation; Trust & Transparency in Biodefence; Biopreparedness, Simulations & Field Exercises; Intelligence & Biological Threat Assessment

Project Type: Biological Weapons Nonproliferation; Biosafety/Biosecurity; Export Control/Border Security; Preparedness/response (outbreak); Preparedness/response (CBRN); Conference/Workshop; Legislative/Regulatory; Network development/outreach; Outreach/awareness-raising; Development of resources/tools/references; Investigations; Knowledge sharing; Confidence-Building; Peer Review

Geographical Focus: Worldwide

Project Description: Our research is theoretically driven, empirically informed and policy-relevant. It draws on a range of methods from participant observation, interviews and documentary analysis, to archival research, database searches and statistical analysis. King's is committed to rigorous and responsible research that contributes to addressing the significant social, political and security challenges of developments in the life sciences. Responding to these challenges rarely involve simple, reductive or straightforward answers; and King's embraces interdisciplinary perspectives and learning, as well as collaborative research.

Funding Partner(s): Various academic and non-academic funding sources

Other Implementing Partner(s): N/A

Project Statuses: Available, Ongoing, Completed

Point(s) of Contact:
Dr Filippa Lentzos
Senior Research Fellow, Department of War Studies and Department of Global Health & Social Medicine
Filippa.Lentzos@kcl.ac.uk

School of Human Sciences
London Metropolitan University (LMU)

Type of Organization: Academia

Description: A group of scientists from London Metropolitan University, University of Bradford, University of Bath, Bulgaria

Organization Location: London, United Kingdom

For more information please visit: www.londonmet.ac.uk

Project Name: Project 1

Project Type: Biological Weapons Nonproliferation; Biosafety/Biosecurity

Geographical Focus: Worldwide

Project Description: A group of scientists from London Metropolitan University, University of Bradford, University of Bath, Bulgaria are working towards agreement on a Biological Security Code of Conduct/Mandatory Education for Life Scientists at the BTWC 9th Review Conference.

Funding Partner(s): The Joseph Rowntree Charitable Trust

Other Implementing Partner(s): N/A

Project Status: Active

Point(s) of Contact:
Professor Lijun Shang, Professor of Biomedical Sciences, School of Human Sciences, LMU
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+44(0)271334805

International Federation of Biosafety Associations (IFBA)

Type of Organization: Professional Association

Organization Description: The Biosecurity Research Initiative at St Catharine's (BioRISC) is a knowledge hub set up to provide cutting-edge evidence-based information about existing and emerging biosecurity risks and interventions. We work across the fields of conservation and environmental management, as well as human, animal and plant health. Our research includes risks from naturally occurring organisms, accidental releases or unintended consequences of novel organisms, and more traditional security concerns, such as the deliberate use of biological agents, scientific knowledge, and related technologies for harmful purposes. The BioRISC initiative uses an innovative combination of research methods to generate, collate, and assess evidence across the different domains of biosecurity. Our core methods include horizon scanning, expert elicitation, fault tree analysis, and interactive evidence synthesis (a novel method that we are developing using dynamic meta-analysis). Our research projects bring together leading scientific experts, technology developers, and policy makers, to shape the biosecurity research agenda and provide a robust evidence base to support decision makers.

Organization Location: Ottawa, Canada

For more information please visit: https://www.caths.cam.ac.uk/research/biorisc

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Project #1 Name: IFBA Professional Certification

Project Type Biosafety/Biosecurity; Professional Certification

Geographical Focus: Worldwide

Project Description: Ensuring that individuals who handle biological materials have demonstrated competencies the safe and secure handling of biological materials is an essential component of the overall effort of reducing biosafety and biosecurity risks. The IFBA's certification program is the only internationally recognized program to certify the competency of individuals in biorisk management, biosecurity, and a variety of related technical disciplines. The program is structured in compliance with the policies and procedures of ISO/IEC 17024: 2012 Conformity assessment - General Requirements for Bodies Operating Certification of Persons. The IFBA's certifications are valid for a period of 5 years after which the certificants must undergo a recertification process. Documented activities demonstrating continued competence and continued practice must be completed and submitted to the IFBA prior to the certificate expiration date. The IFBA publishes a

global directory of individuals who are Professionally Certified by the IFBA's Certification Body. https://internationalbiosafety.org/certification/directory-of-certified-professionals/

Funding Partner(s): US Biological Threat Reduction Program; US Biosecurity Engagement Program; Global Affairs Canada; Sandia National Laboratories

Other Implementing Partner(s): CRDF Global

Project Status: Ongoing

Point(s) of Contact:
Maureen Ellis
Executive Director, IFBA
m.ellis@internationalbiosafety.org

Project #2 Name: IFBA Global Mentorship Program

Project Type Biosafety/Biosecurity; Mentorship

Geographical Focus: Worldwide

Project Description: The IFBA Global Mentorship Program is a worldwide initiative to support and sustain the international biosafety and biosecurity community. Mentor and Mentee pairs are brought together each month to discuss regional and global issues pertaining to biosafety, biosecurity, and biological non-proliferation. Mentees receive guidance from their mentors in obtaining IFBA Professional Certifications and other career developing skills. https://internationalbiosafety.org/program-activities/mentoring/ifba-global-mentorship-program/

Funding Partner(s): Global Affairs Canada

Other Implementing Partner(s): N/A

Project Status: Ongoing

Point(s) of Contact:
Stephanie Norlock
Program Officer, IFBA
s.norlock@internationalbiosafety.org

Project #3 Name: IFBA Equity-Focused Coordinating Committee

Project Type Biosafety/Biosecurity; Outreach/awareness-raising; Knowledge sharing; Equity, Diversity, Inclusivity

Geographical Focus: Worldwide

Project Description: The IFBA's Equity-Focused Coordinating Committee (ECC) is working towards reducing barriers to equity, diversity and inclusivity in global biosafety and biosecurity. The ECC is composed of a diverse set of professionals with demonstrated knowledge and experience in biosafety, biosecurity, and/or disciplines related to gender and intersectional equity. ECC Members steer the production of focused, quantifiable outcomes that are designed to empower, retain, and amplify the voices of marginalized members and leaders within biosafety and biosecurity communities. IFBA ECC activities include continued relevant literature and policy review, engagement with IFBA member biosafety associations, and collaboration with other relevant IFBA regional and institutional partners to foster sustainable and inclusive professional networks in biosafety and biosecurity.
https://internationalbiosafety.org/program-activities/ifba-equity-focused-coordinating-committee/

Funding Partner(s)/Donor(s): Global Affairs Canada

Other Implementing Partner(s): N/A

Project Status: Ongoing

Point(s) of Contact:
Stephanie Norlock
Program Officer, IFBA
s.norlock@internationalbiosafety.org

Science and Technology Center in Ukraine (STCU)

Type of Organization: Intergovernmental Non-profit

Organization Description: The STCU is the first intergovernmental organization in Ukraine and was established by an Agreement signed on 15 October 1993, by the four founding Parties: Ukraine, Canada, Sweden, and the United States of America. The European Union acceded to the STCU agreement on November 26, 1998, and in so doing, replaced Sweden as a Party to the STCU Agreement. Canada withdrew from the STCU Agreement on November 6, 2013. The STCU's main purpose is '..To support research and development activities for peaceful applications by Ukrainian, Georgian, Uzbekistani, Azerbaijani, and Moldovan scientists and engineers, formerly involved with the development of weapons of mass destruction and their means of delivery, as part of the general process of conversion to a civilian, market-oriented environment."

Organization Location: Kiev, Ukraine

For more information please visit: www.stcu.int

Project #1 Name: Cooperative Biological Engagement Program (CBEP), Mentorship Program Development and Implementation.

Project Type: Biosafety/Biosecurity

Geographical Focus: Europe

Project Description: The project goal was planning, development, and implementation of a sustainable mentorship program in Azerbaijan in support of the Threat Agent Detection Response system in order to enhance Biosafety and Biosecurity (BS&S) standards; and strengthen Azerbaijan's ability to detect, diagnose, surveil, and report emerging and re-emerging diseases of international security concern, according to the World Health Organization's (WHO) International Health Regulations (IHR) 2005 and World Health Organization for Animal Health Guidelines (OIE).

Funding Partner(s)/Donor(s): Defense Threat Reduction Agency (DTRA)

Other Implementing Partner(s): N/A

Project Status: Completed

Point(s) of Contact:
Petro Mutovkin, Senior Specialist
peter.mutovkin@stcu.int
+380444907150

Project #2 Name: Emergency Implementation Measures for Pridniprovskiy Chemical Plant (PCHP) at Kamyanske (formally Dneprodzerzhinsk) in Ukraine

Project Type: Chemical Security; Radiological; Technical Training; Site-specific equipment/facility improvements; Development of laws/regulations/guidelines; Needs Assessment/planning

Geographical Focus: Europe

Project Description: The Pridniprovskiy Chemical Plant, during its operation from 1947 to 1992, was one of the largest enterprises of uranium production in the former Soviet Union. This enterprise processed uranium ores of different geochemical composition that had been mined in Ukraine, Central Asia and East-European countries, such as the Czech Republic and Germany. These activities have led to widespread radioactive contamination of the site. Most of the site has received no maintenance or clean-up of any kind, since 1992. The project envisages a number of urgently required safety improvement measures to improve the immediate safety of workers and local citizens, as well as the security of a number of radiological hazards located around the site. The measures include the improvement in local legislation, stabilization of the radiological hazards at the site, capacity building of the site operator, and the supply of urgently required equipment.

Funding Partner(s): European Union through European Commission

Other Implementing Partner(s): N/A

Project Status: Ongoing

Point(s) of Contact:
Elena Taberko, Senior Specialist
elena.taberko@stcu.int
+380444907150

Project #3 Name: Establishing a Regional Nuclear Forensics Network

Project Type: Nuclear; Radiological; Export Control/Border Security; Site-specific equipment/facility improvements; Technical Training; Conference/Workshop

Geographical Focus: Europe

Project Description: The project addresses the strengthening of the non-proliferation regime and counteraction against terrorism threats by improving nuclear forensic capabilities and extending international co-operation in combating illicit trafficking of NRMs in the GUAM region, which includes Georgia, Ukraine, Azerbaijan, and Moldova. The project covers national laboratories of the countries, which are recognized by the governments as expert organizations that perform nuclear forensic characterization of NRMs seized from illicit trafficking.

Funding Partner(s)/Donor(s): European Commission, US Department of State, US Department of Energy

Other Implementing Partner(s): N/A

Project Status: Active

Point(s) of Contact:
Elena Taberko, Senior Specialist
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International Science and Technology Center (ISTC)

Type of Organization: Implementer

Organization Description: The International Science and Technology Center (ISTC) is an intergovernmental organization connecting scientists with their peers and research organizations in other countries. The ISTC Headquarters is in Nur'Sultan, Kazakhstan. Current member governments include Armenia, the European Union, Georgia, Japan, Kazakhstan, the Republic of Korea, Kyrgyzstan, Norway, Tajikistan, and the United States. Scientists from nearly 100 countries have participated in ISTC activities. ISTC facilitates international science projects and assists the global scientific and business community to source and engage scientists and institutes that develop or possess an excellence of scientific know-how.

Organization Location: Astana / Nursultan, Kazakhstan

For more information please visit: http://www.istc.int/en/

Project Name: EU CBRN CoE P53

Project Type: Biosafety/Biosecurity

Geographical Focus: Central Asia

Project Description: Strengthening the national legal framework and provision of specialized training on biosafety and biosecurity in Central Asian countries.

Funding Partner(s)/Donor(s): European Union

Other Implementing Partner(s): European Commission Directorate-General for International Cooperation and Development (DEVCO); United Nations Interregional Crime and Justice Research Institute (UNICRI); Sustainable Criminal Justice Solutions (SCJS); VERTIC; Public Health England; National Institute for Public Health and the Environment (RIVM)

Project Status: Ongoing

Point(s) of Contact:
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Argentina Information Quality (ArgIQ)

Type of Organization: Non-Governmental Organization

Organization Description: ArgIQ is an NGO devoted to spread the information quality methodology in Argentina and other Spanish Speaking countries. We also apply the methodology to the research field of chemical and biological weapons, producing not only research, but also advising and lecturing on both topics.

Organization Location: Buenos Aires, Argentina

For more information please visit: www.argiq.com.ar

Project Name: Disease Surveillance and Early Warning

Project Type: Other Health Security; Disease surveillance

Geographical Focus: Worldwide

Project Description: The project is about how to better understand the epidemiological situation of a country, from a systemic perspective, including a relevant time spam, and respecting the cultural values and principles. For the disease surveillance it includes a multivariable data perspective, including data mining tools, and for early warning the use of anomaly detection principles. The combination of the above mentioned principles and concepts represents a paradigm change that could help not only to face the current pandemic but to be ready at a very low cost for the next one and at the same time, identify accidents and alleged use of biological agents.

Funding Partner(s): Argentina Information Quality (ArgIQ)

Other Implementing Partner(s): N/A

Project Status: Ongoing

Point(s) of Contact:
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Saskia Popescu

Schar School of Policy and Government, George Mason University

Type of Organization: Consultant/Independent Contractor; Academia; Private Sector

Expert Biography: Saskia Popescu is a Term Assistant Professor in the Biodefense Program within the Schar School of Policy and Government at George Mason University. She received her PhD in Biodefense from the Schar School in 2019; a Master's in Public Health with a focus on infectious disease epidemiology and a Master's of Arts in International Security Studies from the University of Arizona. While completing her PhD, she served as a student ambassador for the Global Health Security Agenda Ministerial Meeting in Bali, Indonesia, and has served as a signatory on the NGO statement for the Biological Weapons Convention. During her epidemiology graduate studies, she was a recipient of the Frontier Interdisciplinary eXperience (FIX) HS-STEM Career Development Grant in Food Defense through the National Center for Food Protection and Defensed. Popescu is an Alumni Fellow of the Emerging Leaders in Biosecurity Initiative (ELBI) at the Johns Hopkins Bloomberg School of Public Health, Center for Health Security. She currently serves as a member of the Federation of American Scientists (FAS) Coronavirus Taskforce and is a member of the Committee on Data Needs to Monitor Evolution of SARS-CoV-2 within the Health and Medicine Division of the National Academies of Sciences, Engineering, and Medicine (NASEM).

Prior to joining George Mason University, Popescu worked as infection prevention epidemiologist in several large healthcare systems, working to enhance readiness and biopreparedness. More recently, she created and disseminated a gap analysis for a six-hospital system to establish vulnerabilities for high-consequence diseases, helping to guide the creation of a high-consequence disease initiative to enhance readiness at the healthcare level. This work aided in rapid and coordinated responses to COVID-19. Her assessment and leadership regarding healthcare biopreparedness efforts has resulted in several peer-reviewed literature. She is certified in infection prevention (CIC), hospital preparedness through FEMA's NIMS, and pandemic preparedness from the DHS Center for Domestic Preparedness. Popescu's research addresses gaps within global health security, biodefense, healthcare biopreparedness, and the integration of antimicrobial resistance into global health security initiatives. She also serves as an adjunct professor in the University of Arizona College of Public Health Epidemiology and Biostatistics program.

Internationally recognized and experienced infectious disease epidemiologist and infection preventionist with a strong background in enhancing healthcare biopreparedness, infectious disease threats, pandemic preparedness/response, project management, translation of complex issues into frontline applications, and disease surveillance. Dr. Popescu is passionate about healthcare biopreparedness, driving change across sectors in global health security, and antimicrobial resistance. Dr. Popescu is serving as a consultant with the World Health Organization and helping to lead the Netflix infection prevention efforts for return to production work. She is also an Affiliate of the

Georgetown University Center for Global Health Science and Security, an adjunct professor in the University of Arizona College of Public Health Epidemiology and Biostatistics program.

Organization Location: Phoenix, Arizona, USA

For more information please visit: https://schar.gmu.edu/about/faculty-directory/saskia-popescu

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Project #1 Name: Political and Economic Obstacles to Investing in Infection Prevention - the Impact on Biodefense

Project Type: Biosafety/Biosecurity; Other Health Security; Disease surveillance; Preparedness/response (outbreak)

Geographical Focus: Worldwide

Project Description: Healthcare-associated infections (HAI) represent a growing public health threat and economic burden, while outbreaks of emerging infectious diseases (EID) have shown a propensity for amplification in hospitals. This dissertation uses a political economy (PE) framework to explore the incentives and disincentives for hospitals to invest sufficient resources in infection prevention and control (IPC). Through the PE lens, it becomes clear that the profit-seeking behavior of the U.S. healthcare industry often runs counter to IPC priorities. Utilizing HAI and EID outbreaks as case studies, this mixed method approach identifies market failures and assesses government interventions that occur when private hospital interests prioritize profit over public health. Moreover, as COVID-19 has shown, hospitals are exceedingly vulnerable to biological threats. The strength of hospital IPC and subsequent bio-preparedness has direct implications for biodefense.

Funding Partner(s): N/A

Other Implementing Partner(s): N/A

Project Status: Ongoing

Point(s) of Contact:
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Project #2 Name: Healthcare Biopreparedness

Project Type: Biosafety/Biosecurity; Other Health Security; Disease surveillance

Geographical Focus: Worldwide

Project Description: Healthcare-associated infections (HAI) represent a growing public health threat and economic burden, while outbreaks of emerging infectious diseases (EID) have shown a propensity for amplification in hospitals. This work uses a political economy (PE) framework to explore the incentives and disincentives for hospitals to invest sufficient resources in infection prevention and control (IPC). Through the PE lens, it becomes clear that the profit-seeking behavior of the U.S. healthcare industry often runs counter to IPC priorities. Utilizing HAI and EID outbreaks as case studies, this mixed method approach identifies market failures and assesses government interventions that occur when private hospital interests prioritize profit over public health. The preparedness for infectious diseases (biopreparedness) within hospitals has shown a level of importance of vulnerability that is deeply rooted in country readiness during the COVID-19 pandemic.

Funding Partner(s): N/A

Other Implementing Partner(s): N/A

Project Status: Active

Point(s) of Contact:
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Spopesc2@gmu.edu
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Mariam Elgabry

Type of Organization: Consultant/Independent Contractor

Expert Biography: Mariam Elgabry, Co-founder and Director of Enteromics, a MedTech startup that is changing the way we monitor gut health, through the power of IoT. They're building GutLab™ a proprietary platform for smart and secure gut-sensing pills that pair with their app to deliver AI-powered medical insights, moving healthcare from the hospital to the comfort of your home.

Mariam's background is in deep-tech and bioengineering, holding a MSc in Bioinformatics & Theoretical Systems Biology from Imperial College London, as well as a MRes in Security & Crime Science from the University College London (UCL). At UCL, She researches Bio-crime, the Internet-of-Medical-Things (IoMT), and Cyber-biosecurity as part of her PhD at the Dawes Centre for Future Crime. Her most recent work discusses the COVID-19 pandemic and its effect on Cyber-biosecurity in the UK and abroad; published by the UK Parliament Joint Committee on National Security.

Mariam's experience lies at the intersection of industry and research, focusing on tech, health and security. At AstraZeneca, She led an award winning technology for early detection systems in drug testing. Later, as a Lead Microsoft Student Partner, she had the opportunity to help translate technology and innovative tools, from hackathons into start-ups. Alongside her studying, her work as a Sergeant at the London Metropolitan Police exposed her to operations on the field, including risk mitigation - from managing policing activity, to effective deployment of resources to incidents; skills later applied in her work as a Security Design Consultant at Toren.

Organization Location: London, United Kingdom

Project #1 Name: A Systematic Review of the Criminogenic Potential of Synthetic Biology and Routes to Future Crime Prevention

Project Type: Research

Geographical Focus: Worldwide

Project Description: Synthetic biology has the potential to positively transform society in many application areas, including medicine. In common with all revolutionary new technologies, synthetic biology can also enable crime. Like cybercrime, that emerged following the advent of the internet, biocrime can have a significant effect on society, but may also impact on peoples' health. For example, the scale of harm caused by the SARS-CoV-2 pandemic illustrates the potential impact of future biocrime and highlights the need for prevention strategies. Systematic evidence quantifying the crime opportunities posed by synthetic biology has to date been very limited. Here, we systematically reviewed forms of crime that could be facilitated by synthetic biology with a view to informing their

prevention. A total of 794 articles from four databases were extracted and a three-step screening phase resulted in 15 studies that met our threshold criterion for thematic synthesis. Within those studies, 13 exploits were identified. Of these, 46% were dependent on technologies characteristic of synthetic biology. Eight potential crime types emerged from the studies: bio-discrimination, cyber-biocrime, bio-malware, biohacking, at-home drug manufacturing, illegal gene editing, genetic blackmail, and neuro-hacking. 14 offender types were identified. For the most commonly identified offenders (>3 mentions) 40% were outsider threats. These observations suggest that synthetic biology presents substantial new offending opportunities. Moreover, that more effective engagement, such as ethical hacking, is needed now to prevent a crime harvest from developing in the future. A framework to address the synthetic biology crime landscape is proposed.

Funding Partner(s): Engineering and Physical Sciences Research Council (EPSRC); Dawes Centre for Future Crimes, University College London *[The views expressed are those of the author(s) and not necessarily those of the EPSRC or Department of Security and Crime Science, Jill Dando Institute.]*

Other Implementing Partner(s): Dawes Centre for Future Crimes, University College London; Jill Dando Institute, University College London; Police Insights

Project Status: Completed

Point(s) of Contact:
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Project #2 Name: Consensus on the Future of Biocrime for Biosecurity and Health Policy Implications Using a Parallel Delphi Process

Project Type: Biosafety/Biosecurity; Other Health Security; Preparedness/response (outbreak); Research; Investigation; Knowledge sharing

Geographical Focus: Worldwide

Project Description: A Delphi study was conducted to elicit information from experts to identify future issues in synthetic biology for which there is a consensus of opinion and those for which there is not. Traditional experts, such as those in the fields of biotechnology, intelligence and security were interviewed and asked to forecast, given their knowledge and expertise, emerging crime trends (if any) facilitated by biotechnology and what, if anything should be done to safeguard against it. Non-traditional experts, such as "biohackers" and biotech start-up entrepreneurs were also interviewed. Having two groups and using the opinions of recognized but also "non-traditional" experts is an advantage as crimes are expected to be more sophisticated in the future; to which we may be ill-prepared to meet and that may have not yet begun to be addressed, especially in proportion to their scope. Individuals of each group were independently interviewed/surveyed in the first round, and the aggregation of the responses were used to generate the next round of questions.

This study entailed three rounds to obtain consensus on biocrime events anticipated, (i) what forms these will take and (ii) what it is that we should be doing now for their prevention. Traditional and non-traditional experts strongly agreed that biocrime is anticipated within the cyber infrastructure of, for example, medical devices and hospitals, through breaches and for corporate espionage. Both experts strongly agreed that corporations will be most affected and that these crimes are anticipated to first take place where cutting-edge technology is being pioneered; within academia and China. Preventative steps that both expert groups strongly agreed in involved increasing public biotechnology and biosecurity literacy, and increasing funding towards addressing biotechnology security. Both type of experts agreed that the mitigation responsibility is among national governors. Non-traditional experts generated more scenarios than the traditional group and had stronger opinions, with a wider distribution.

This study involved a systematic, anonymous and independent interaction to elicit opinions and forecasts from a diverse panel of experts. The aggregation of these outputs provided meaningful insights in anticipating emerging trends in crime and security that may be facilitated by synthetic biology. A multi-sector crime prevention and health policy strategy is proposed.

Funding Partner(s): Engineering and Physical Sciences Research Council (EPSRC); Dawes Centre for Future Crimes, University College London *[The views expressed are those of the author(s) and not necessarily those of the EPSRC or Department of Security and Crime Science, Jill Dando Institute.]*

Other Implementing Partner(s): Dawes Centre for Future Crimes, University College London; UK Home Office

Project Status: Completed

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Catalogue compiled by:

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STIMSON

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