# Class of 2018 Yearbook

## Emerging Leaders in Biosecurity Initiative

*A competitive fellowship program created to identify, develop, and provide networking opportunities for the next generation of leaders in biosecurity.*

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# Emerging Leaders in Biosecurity Class of 2018

The ELBI Fellowship program is made possible through financial support from the Open Philanthropy Project, under management by the Johns Hopkins Center for Health Security, and with the leadership of the ELBI Executive Steering Committee.

For more information, please visit the ELBI website:
http://www.centerforhealthsecurity.org/ELBI

Johns Hopkins Bloomberg School of Public Health | Center for Health Security

Open Philanthropy Project

"It is a vital interest of the United States to manage the risk of biological incidents. In today's interconnected world, biological incidents have the potential to cost thousands of American lives, cause significant anxiety, and greatly impact travel and trade. . . . Advances in science promise better and faster cures, economic advances, a cleaner environment, and improved quality of life, but they also bring new security risks. In this rapidly changing landscape, the United States must be prepared to manage the risks posed by natural outbreaks of disease, accidents with high consequence pathogens, or adversaries who wish to do harm with biological agents."

*The National Biodefense Strategy, 2018*


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Senate Intel
Jordan Schermerhorn
Aaron Resnick
Laiza Mullen
Joseph Leonard
Andrew Snyder Beattie
Neil Vora
Keith Pardee

# Emerging Leaders in Biosecurity Initiative

*Tom Inglesby, Director*
*Anita Cicero, Deputy Director*
*Johns Hopkins Center for Health Security*

To the ELBI 2018 Fellows,

Congratulations on a wonderful ELBI fellowship year! This 2018 class has been so impressive. You have shown throughout the year that you have an incredible amount of knowledge and enthusiasm for your work, which will benefit the field greatly. Your cohort was very cohesive from the start and has been exceptionally engaged and thoughtful. From Washington, DC, to Oxford, you came together and shared some great conversation, inspired ideas, and camaraderie that we hope will continue well beyond the end of your fellowship year.

We are very proud of the ELBI program and of you all, and we are very grateful for the support of the Open Philanthropy Project and their commitment to building the biosecurity field through this program.

Although your fellowship year has ended, we hope that you will remain engaged as part of our alumni group by attending and participating in future meetings like the annual research and policy symposium, alumni dinners and other gatherings, and other special events like the annual trip to the Biological Weapons Convention in Geneva. You will also get invitations for other Center for Health Security events, and we hope to see you there!

All the best, and we'll look forward to seeing where you all go from here!

# Executive Steering Committee

Members of the Executive Steering Committee are senior leaders in US and UK biosecurity and biodefense who collectively work or have worked in government, private industry, and academia. Their expertise and experience make this body uniquely suited to offer guidance to the fellowship as we work to develop the nation's next generation of leaders in biosecurity.

**Parney Albright, PhD**, *CEO and President, HRL Laboratories, LLC*

**Stephen Bartlett, PhD**, *British Defence Staff, Chemical and Biological Threat Reduction*

**Kenneth W. Bernard, MD, RADM, USPHS (Ret)**, *Former Special Assistant to the President for Homeland Security, Health, Security and Biodefense Affairs*

**Luciana Borio, MD**, *National Security Council, The White House*

**Lance Brooks**, *Division Chief, Cooperative Biological Engagement Program, Department of Defense*

**Richard Danzig, PhD, JD**, *Senior Fellow, Johns Hopkins Applied Physics Laboratory*

**David Franz, DVM, PhD**, *Principal, SBDGlobal*

**John Grabenstein, PhD, COL, USA (Ret)**, *Executive Director, Global Health & Medical Affairs, Merck Vaccines*

**Jo L. Husbands, PhD**, *Scholar/Senior Project Director, Board on Life Sciences of the US National Academy of Sciences*

**Ambassador Bonnie Jenkins, PhD, JD**, *Founder and President, Women of Color Advancing Peace and Security, and Joint Visiting Fellow, University of Pennsylvania and The Brookings Institution*

**Lawrence Kerr, PhD**, *Director, Pandemics and Emerging Threats, Department of Health and Human Services*

**Ali Khan, MD, MPH, RADM, USPHS (Ret)**, *Dean, UNMC College of Public Health*

**Randall J. Larsen, COL, USAF (Ret)**, *National Security Advisor, Johns Hopkins Center for Health Security*

**Tara O'Toole, MD, MPH**, *Executive Vice President, In-Q-Tel*

**Stephen Redd, MD, RADM, USPHS**, *Deputy Director, Public Health Service and Implementation Science, and Director, Center for Preparedness and Response, CDC*

**Jaime Yassif, PhD**, *Former Program Officer, Biosecurity and Pandemic Preparedness, Open Philanthropy Project*

# Emerging Leaders in Biosecurity
# Class of 2018

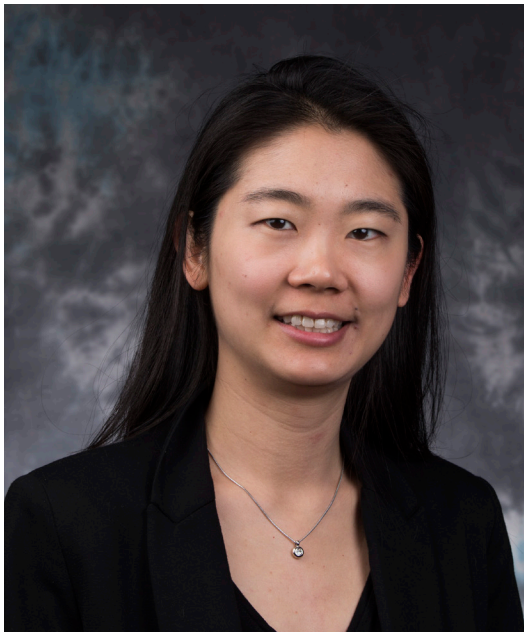
# Warren Acuncius

Warren Acuncius works for USAID's Office of US Foreign Disaster Assistance (OFDA) as the lead Humanitarian Assistance Advisor/Military at the Department of Defense Indo-Pacific Command, based in Oahu, Hawaii. Previously, as the Military Liaison Team Technical Operations Branch Chief, he coordinated OFDA's chemical, biological, radiological, nuclear, high-yield explosives (CBRNE) portfolio. In addition to these primary duties, Mr. Acuncius also facilitates the Joint Humanitarian Operations Courses (JHOC) educating US military colleagues, academics, and diplomats on the US government best practices, policies, and procedures for conducting overseas humanitarian assistance and disaster relief. He also co-facilitates the United Nation's Civil Military Coordination Course (UNCMCOORD) for an international audience. Mr. Acuncius has supported numerous humanitarian responses from rapid onset (eg, 2015 Nepal earthquake) and slow onset (eg, 2017 Horn of Africa drought) to complex emergencies (2014 Syria).

Prior to his time with OFDA, Mr. Acuncius supported the Federal Emergency Management Agency's (FEMA) planning branch and worked for nongovernmental organizations in Haiti and South Africa. He is from Washington State and graduated from (and teaches at) the University of Washington's Evans School of Public Policy and Governance, with a master's degree in public administration and an international development certificate. He holds a bachelor's degree from Western Washington University.

# Evan Appleton

Evan Appleton is a postdoctoral research fellow at Harvard Medical School in the Church Lab in the Department of Genetics. He completed his doctorate at Boston University in the bioinformatics program, where his research was supervised by Douglas Densmore, PhD. His thesis work consisted of building computer-aided design tools for synthetic biology workflows. Specifically, he developed tools for specification, design, construction, testing, and analysis of synthetic genetic regulatory networks in E. coli and performed experimental validation for these tools. His thesis was awarded the 2016 Charles DeLisi Doctoral Dissertation Award for an outstanding thesis in bioinformatics.
Dr. Appleton's current research interests include developmental biology, biosecurity, synthetic biology, and computer-aided design. In the Church Lab, he leads a project supported by the DARPA ELM program for synthetic biology–based shape formation of multicellular masses and a project supported by the IARPA FunGCAT program for identifying potentially toxin-creating DNA sequences.



# Hattie Chung

Hattie Chung is a postdoctoral fellow at Harvard University and at the Broad Institute. She received her PhD in systems biology from Harvard and her bachelor's degree in biological engineering from the Massachusetts Institute of Technology with a minor in applied international studies. An expert in pathogen evolution, Dr. Chung used genomics and computational analysis during her PhD work to show that respiratory pathogens can evolve to adapt to different niches of the human lung. Currently, her research is focused on how the microbiome influences the neuroendocrine system. In the past, her research areas have spanned synthetic biology, drug delivery, genome engineering, and antibiotic resistance. Dr. Chung has worked internationally in Israel, Tanzania, France, and Korea in areas of scientific research, global health, and design.

# Lina Faller

Lina Faller is a computational biologist working at Ginkgo Bioworks, a synthetic biology company that engineers and licenses synthetic organisms. In this position, she is the analytical lead for projects dealing with genetic sequence diversity of complex strains that Ginkgo engineers, validating the productivity of engineered strains and assembling reference genomes of biologically diverse fungi and microbes. Dr. Faller previously worked at the Forsyth Institute, analyzing the microbiome associated with the human oral cavity, and at the New York Genome Center, where she was responsible for implementing tools to accurately type human HLA regions in genome data as well as characterize xenograft tumor samples.

Dr. Faller received her MSc and PhD in bioinformatics at Boston University in 2010 and 2014, respectively. She received a BS in computer science from the University of New Hampshire in 2008.

# Michelle Holko

Michelle Holko is a senior lead scientist at Booz Allen Hamilton, supporting the Biological Technologies Office of the Defense Advanced Research Projects Agency (DARPA) in the areas of infectious diseases, genomics, bioinformatics, and data analysis. Prior to joining Booz Allen, she was a staff scientist for the National Center for Biotechnology Information at the National Institutes of Health, where she worked with the Gene Expression Omnibus (GEO) group curating data for the GEO database and developing the GEO2R analysis tool to promote re-use of biomedical data.

Dr. Holko received a PhD in genetics from Case Western Reserve University for her work at the Cleveland Clinic Lerner Research Institute, where she developed a custom microarray of interferon stimulated genes and studied the gene expression response to interferon therapy in kidney cancer. During her postdoctoral research fellowship at Northwestern University, she pursued additional training in biostatistics and data analysis, earned an MA in scientific clinical investigation, and applied bioconductor/R to analyze microarray gene expression data sets from breast cancer patients to elucidate differences associated with therapeutic response.

Dr. Holko completed a BA in biology while also studying vocal performance at Oberlin College. She is particularly interested in biosecurity as it relates to open data and biomedical data sharing.

# Gabriel Innes

Gabriel Innes is a second-year doctoral student in the Department of Environmental Health and Engineering, pursuing a PhD at the Johns Hopkins Bloomberg School of Public Health. His main interests involve global health at the animal, human, and environmental interface. This includes food security, zoonosis, and antibiotic resistance. Dr. Innes's dissertation research is focused on infectious disease models of antimicrobial resistance in animal agriculture. He received his bachelor of science degree from the Schreyer's Honors College at Pennsylvania State University and a veterinariae medicinae doctoris (VMD) at the University of Pennsylvania School of Veterinary Medicine. Dr. Innes has held positions at the US Department of Agriculture, the Food and Agriculture Organization of the United Nations, and the World Health Organization HQ.

# Christopher Isaac

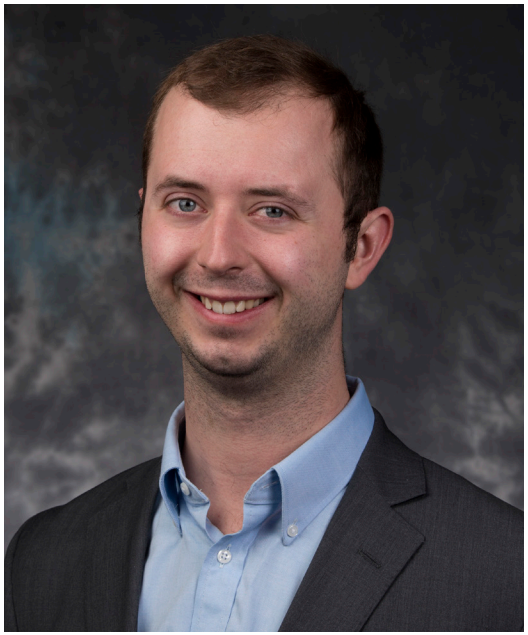
Christopher Isaac became involved with synthetic biology at age 16 through the International Genetically Engineered Machines (iGEM) competition and has since contributed to several award-winning high school projects. Following this success, he has continued to be consistently involved with iGEM at the collegiate level during his undergraduate degree at the University of Lethbridge in Alberta, Canada, while completing a bachelor of science degree in biology with a minor in philosophy.

During this time, he co-founded a biotechnology start-up and began unrelated work developing biosecurity software as an iGEM project. Since then, he has completed his degree and has represented iGEM at the United Nations Biological Weapons Convention. Mr. Isaac is currently pursuing a master of science degree in biochemistry, concentrating on bioinformatic analysis, and will be continuing his biosecurity research exploring the control of toxin-encoding nucleic acids, designer viruses, and community-lab biology.

# Kirsten Kulcsar

Kirsten Kulcsar is a postdoctoral fellow at the University of Maryland School of Medicine. Her work focuses on studying the immune response to and the mechanisms of pathogenesis of Middle East respiratory syndrome coronavirus (MERS-CoV) infection. In particular, she is interested in determining why individuals with diabetes experience more severe disease following MERS-CoV infection.

Dr. Kulcsar was previously a postdoctoral fellow at the United States Army Medical Research Institute of Infectious Diseases (USAMRIID) and used genomics techniques to study the pathogenesis and host immune response to high-consequence pathogens, including Ebola virus, Marburg virus, and alphaviruses. Dr. Kulcsar earned her PhD in cellular and molecule medicine at the Johns Hopkins University School of Medicine, where she focused on understanding the mechanisms of immunopathogenesis and immune regulation to lethal alphavirus infection. She earned her BS in biochemistry from Colorado State University. Her primary research interests are centered around epidemic and pandemic preparedness.



# Joseph Lewnard

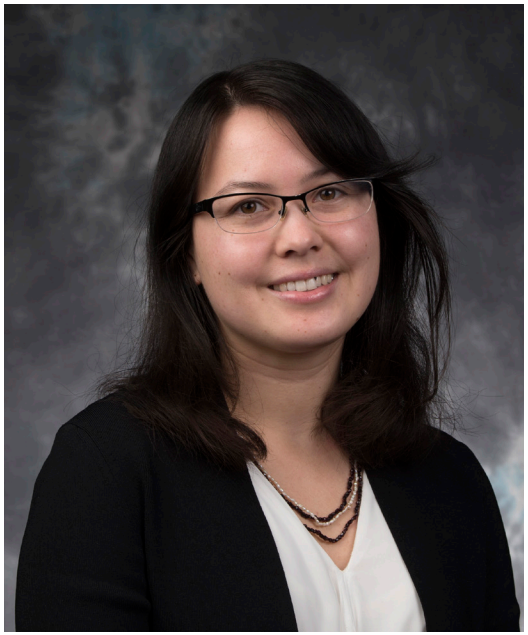
Joseph Lewnard is an assistant professor in the Division of Epidemiology, University of California, Berkeley School of Public Health. He works on the development and application of quantitative methods for modeling infectious disease transmission. Current projects address the emergence of antimicrobial resistance in numerous commensal bacteria globally and the reemergence of mumps in vaccinated populations. He earned a PhD in epidemiology of microbial diseases at Yale University in 2016 and was a postdoc in the Center for Communicable Disease Dynamics at Harvard TH Chan School of Public Health.

# Yong-Bee Lim

Yong-Bee Lim is a doctoral candidate in biodefense at George Mason University. His research examines how emerging technologies and nontraditional actors are affecting the benefits and risks associated with the life sciences and other disciplines.

He was a recipient of the Presidential Scholarship for the biodefense program at George Mason University's Schar School of Policy and Government, where he worked with Dr. Gregory Koblentz on topics ranging from Syrian chemical weapons to the spread of CRISPR technology in academia. He was also chosen by the Johns Hopkins Center for Health Security as an SB7.0 fellow, which supported his attendance at an international synthetic biology conference in Singapore.

In addition, Mr. Lim has worked on issues ranging from emerging technologies and weapons of mass destruction to emergency preparedness and response at the Department of Defense's National Defense University, the Department of Energy's Lawrence Livermore National Laboratory, and the Department of Health and Human Services' Assistant Secretary for Preparedness and Response. He holds an MS in biodefense and a BS in psychology from George Mason University.

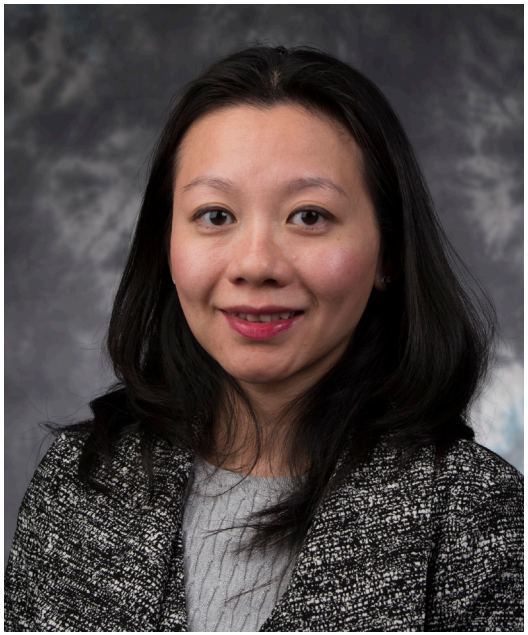


# Natalie Ma

Natalie Ma is a synthetic biologist and consultant at ClearView Healthcare Partners, with expertise in engineered biological systems and biocontainment, negotiation, and business strategy in the life sciences. Prior to her work at ClearView, she completed a BS in environmental science at UCLA, studying agricultural plant-microbe symbiosis, and her PhD in molecular biology at Yale University engineering genetic firewalls to limit horizontal gene transfer between engineered organisms and the natural world. She also served as a teaching fellow in negotiation and persuasion at the Yale School of Management, where she helped students learn negotiation techniques to raise funds for nonprofit organizations. After graduating from Yale, Dr. Ma spent a year traveling and hiking around the world before joining ClearView to provide strategic insights to pharmaceutical and life science companies. Beyond consulting, her long-term goal is to develop self-sustaining biological technologies for space travel, ecosystem repair, and defense against biological threats.

# Lucia Mullen

Lucia Mullen works for the World Health Organization as a member of the Health Security Interface, in the WHO Health Emergencies Programme. Her work focuses on all public health activities whose performance involves the security sector. Currently, she is specializing in strengthening the WHO internal preparedness and response capacity for a deliberate event involving chemical, biological, or radionuclear agents. This includes supporting the development of several tools and training programs. Additionally, Ms. Mullen attends various workshops, field missions, and conferences with other international organizations and national experts addressing the health and policy aspects of global health security threats in efforts to advocate the need for collaboration between the health and security sectors. She holds a master's degree in public health in epidemiology with a concentration on global health from the University of Texas Health Science Center and a bachelor of science degree in molecular and cell biology from Texas A&M University.



# Tiffany Nguyen

Tiffany Nguyen is the first Army fellow in the Biosecurity/Biosafety Fellowship at the United States Army Medical Research Institute of Infectious Diseases (USAMRIID), the nation's premier biodefense laboratory. She specializes in high-containment research that supports the scientific, regulatory, biosecurity, biosafety, and engineering requirements deemed necessary in the biosecurity field. Previously, she served as chief of clinical chemistry at the Walter Reed National Military Medical Center in Bethesda. Prior to joining the military, she was a postdoctoral fellow at the National Institutes of Health, working on elucidating mechanisms of cardio-protection in the model of ischemia/reperfusion injury. Major Nguyen received a BS in biological sciences from the University of Denver and a PhD in biomedical sciences (pharmacology and toxicology) from the Medical College of Georgia. She is an ASCP board-certified specialist in clinical chemistry. She is currently working on her MS in biotechnology, specializing in biosecurity and biodefense, at the University of Maryland University College.

# Lauren Oldfield

Lauren Oldfield joined the J. Craig Venter Institute in 2014 and worked with Dr. Sanjay Vashee and in collaboration with Dr. Prashant Desai at Johns Hopkins University to establish a novel reverse genetic system for large double-stranded DNA viruses, specifically herpesviruses, using synthetic genomic tools. Overlapping fragments, which span the entirety of the herpes simplex virus type 1 (HSV-1) genome, were cloned in yeast by transformation-associate recombination cloning. These genomic fragments can be modified or redesigned from synthetic parts in parallel. Complete virus genomes were assembled in yeast from wild-type and/or modified fragments that are “mixed and matched” to rapidly generate combinatorial mutants. This technology can be used to speed the development of herpesvirus-based therapeutics, such as oncolytic viruses, and hopefully lead to more effective treatments. These synthetic genomic tools can also be expanded to other dsDNA viruses that are human and animal pathogens to improve genetic tractability and rational vaccine design. Combining comparative genomics with synthetic genomics assembly of virus genomes will improve understanding of the genetic determinants of virulence and cell tropism in large dsDNA viruses.

Dr. Oldfield’s other research interests include investigating the role of the microbiome on the effects of pollution exposure and using cloning in yeast to generate sequencing templates for repetitive regions in pathogen and animal model system genomes.

Dr. Oldfield completed her BS in biology at the University of Akron and her PhD at the University of Pittsburgh under the guidance of Dr. Graham Hatfull, studying the gene expression in lytic versus lysogenic growth of mycobacteriophages, which are viruses that infect mycobacterial species.

# Keith Pardee

Keith Pardee is an assistant professor in the Leslie Dan Faculty of Pharmacy at the University of Toronto. He recently completed a postdoctoral fellowship under the supervision of Prof. James Collins at the Wyss Institute at Harvard University, where he combined in vitro synthetic biology with materials science to build the first safe and sterile method to deploy gene circuits outside of the lab. This approach has recently been used to create low-cost diagnostics for the Zika virus, as well as a platform for portable manufacturing of therapeutics. The Pardee lab uses in vitro synthetic biology to generate novel applications in biosensing and bioproduction that are durable and easily deployable.

# Jenish Patel

Jenish Patel is a specialist in the Technology Transfer and Intellectual Property Office of the National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH), in the Department of Health and Human Services. Dr. Jenish currently manages the patenting, licensing, and collaborative agreement portfolios of divisions of NIAID focused on infectious diseases, including influenza, Ebola, and Zika. He leads efforts to facilitate collaborations among NIAID scientists, biopharmaceutical companies, and other government or academic institutions, including international organizations, in order to develop new technologies and transfer technologies into commercial products of public health importance, such as vaccines and therapeutics against infectious diseases.

Prior to joining NIAID, Dr. Jenish performed his doctoral and postdoctoral studies in microbiology and infectious diseases at the Icahn School of Medicine at Mount Sinai in New York, NY, where he led studies on innate immune responses to viruses. Before graduate studies, as an emerging infectious diseases fellow of the Association of Public Health Laboratories and the Centers for Disease Control and Prevention (CDC), Dr. Jenish studied immunity to pandemic influenza viruses and contributed to CDC's response to the 2009 H1N1 influenza pandemic.

# Edward Perello

Edward Perello is a prinicipal at Arkurity, as well as co-founder and chief business officer of Desktop Genetics, an international provider of CRISPR genome editing libraries for functional genomics and drug discovery. He has expertise in genome editing and synthetic biology, communications, product development, and biosecurity.

Mr. Perello is a SynBio LEAP fellow, and he currently serves on the IUCN Synthetic Biology taskforce. He also worked for the EU Science and Technology section in Washington, DC, and on the national implementation team at the arms control charity VERTIC. He formerly co-chaired the iGEM software track and was the UK ambassador for Hello Tomorrow. In 2017 he was listed on the Forbes 30 Under 30 in Tech in Europe and nominated to the Kairos 50. Mr. Perello holds a BSc in bioveterinary science from London's Royal Veterinary College and an MPhil in bioscience enterprise from the University of Cambridge.

Mr. Perello's research interests include the governance and policy of biotechnology—in particular, the oversight of human genome editing and the development of appropriate governance frameworks for conservation biotechnology.

# Aaron Resnick

Aaron Resnick is the planning and preparedness manager for the Northwest Healthcare Response Network, the healthcare preparedness coalition in western Washington State. His main responsibilities include managing regional and state-wide projects, such as healthcare acute infectious disease sustainment and hospital surge capacity, as well as coalition-wide preparedness exercises. Mr. Resnick has presented at state, regional, and national conferences on topics ranging from acute infectious disease preparedness to hospital capacity issues. Previously, he served as the emergency preparedness coordinator at Inova Fairfax Medical Campus in Falls Church, VA, northern Virginia's largest hospital and level I trauma and pediatric center. His prior work includes foreign and security policy analysis in Washington, DC. He holds a BA in diplomacy and world affairs from Occidental College in Los Angeles and an MA in war studies from King's College London.

# Michelle Rozo

Michelle Rozo is a 2017-18 AAAS Science and Technology Policy Congressional Fellow. She is spending her fellowship year on the health legislative team in the office of Senator Bob Casey, covering a diverse portfolio, including the reauthorization of the Pandemic and All-Hazards Preparedness Act (PAHPA), global health, and agrodefense. Dr. Rozo has particular expertise in the role of scientists in promoting biodefense and global health security. Prior to joining AAAS, she directed clinical laboratory operations in West Africa for the Naval Medical Research Center's sepsis study, where she built the first functioning microbiology lab in Liberia in 40 years. She has previously held positions at the Federation of American Scientists and the BSPH Center for Health Security. Dr. Rozo has published extensively in leading journals, including Nature Medicine and Trends in Microbiology, and in ASM Press, on topics ranging from biosafety and biosecurity to muscular dystrophy. Dr. Rozo earned a BA in biological sciences from Northwestern University in 2009 and completed a PhD in molecular biology from Johns Hopkins University in 2015.

# Lauren Sauer

Lauren Sauer is an assistant professor of emergency medicine in the Johns Hopkins School of Medicine, with a joint appointment in the Center for Humanitarian Health in the Johns Hopkins Bloomberg School of Public Health. She serves as director of operations for the Johns Hopkins Office of Critical Event Preparedness and Response and the director of research for the Johns Hopkins Biocontainment Unit. She also serves as the JHU focal point for their partnership with the WHO Global Outbreak and Alert Response Network.

Ms. Sauer is the past chair of the Society for Academic Emergency Medicine's Disaster Interest Group and the co-director of the Johns Hopkins School of Medicine Disaster Education course, required for all first-year medical students. Ms. Sauer has been working in the field of disaster and public health emergency research and education for over a decade. Her current work focuses mainly on healthcare infrastructure in disasters and outbreaks, including rapid diagnostic systems and novel therapeutics in public health emergencies, clinical resource availability and access, and the impact of policy on preparedness and response capabilities.

# Jordan Schermerhorn

Jordan Schermerhorn will shortly begin a deployment to Djibouti as a biomedical research assistant with KBRwyle, in support of Naval Medical Research Unit 3. In Djibouti, she will conduct research on infectious disease seasonality, postexposure serology, and antibiotic resistance in support of US forces serving with AFRICOM.

Ms. Schermerhorn recently served as a technical advisor and national data manager with the Guinea Worm Eradication Program in Chad, where she managed national human and animal Guinea worm surveillance reports, developed monitoring and evaluation frameworks for One Health programming, and conducted exploratory analyses and operational research to clarify mysterious transmission patterns in the last stages of the eradication effort.

Previously, she served in the White House on the 2015 update to the National HIV/AIDS Strategy, conducted research on immunization delays among Palestinian refugees with the UN Relief and Works Agency, and designed local production processes for shelf-stable HIV/AIDS medication in Uganda. Ms. Schermerhorn holds an MSc in global health from Duke University and a BS in bioengineering from Rice University.

# Andrew Snyder-Beattie

Andrew Snyder-Beattie is director of research at the Future of Humanity Institute, University of Oxford, where he leads a number of research, policy, outreach, and fundraising activities. His work focuses on the protection of future generations, with a particular focus on existential risks and longer-term biosecurity and nonproliferation issues. His research has been presented in fora such as the US National Academy of Sciences and at the UN Biological Weapons Convention. Before coming to Oxford, he worked at MetaMed, a medical research startup. He holds degrees in biomathematics and economics and, while working at FHI, is simultaneously pursuing a doctorate degree in zoology at the University of Oxford.

# Carl Soffler

Carl Soffler is a product manager in the Pharmaceutical Systems Project Management Office at the United States Army Medical Material Development Activity (USAMMDA), working on the advanced development of analgesics and blood products for the treatment of battlefield injuries. He previously served at the United States Army Medical Research Institute of Infectious Diseases (USAMRIID) as the chief of animal modeling and the chief of in vitro and mouse therapeutics in the bacteriology division, as well as the educational outreach coordinator for the institute. His work focused on the development of new animal models of disease for the testing and evaluation of medical countermeasures.

LTC Soffler earned his DVM from Cornell University in 2004 and completed a residency program in equine internal medicine at Colorado State University, culminating in board certification in large animal internal medicine in 2008. He completed his PhD in microbiology at Colorado State University in 2012, which focused on the development of large animal models of infection with the select agents Burkholderia pseudomallei (melioidosis) and B. mallei (glanders).

# Gregory Sunshine

Gregory Sunshine serves as a public health analyst with the CDC's Public Health Law Program in the Center for State, Tribal, Local, and Territorial Support (proposed). He oversees the Disaster and Public Health Emergency Declaration Law Project, as well as a number of other public health law research topics, including Zika emergency response authorities, state Ebola monitoring and movement policies, isolation and quarantine, medical countermeasures, and the legal preparedness competencies. Dr. Sunshine travels to health departments, teaching response personnel about the role of the law in public health emergencies, and serves on the Healthcare Preparedness Activity Closed Points of Dispensing Toolkit for Healthcare Partners Advisory Group and the ASTHO and NACCHO Legal Preparedness workgroups. He has also published on topics such as gubernatorial emergency authorities, Ebola and the law, and tribal emergency declarations. He earned his JD with a certificate in health law from the University of Maryland School of Law and his bachelor of arts in political science from Dickinson College.

Dr. Sunshine is licensed to practice law in the state of Maryland. Prior to coming to the CDC, he coordinated bioterrorism preparedness and emergency response for the Baltimore City Health Department, where he participated in a number of response efforts, including for Hurricane Sandy in 2013.

# Alexander Titus

Alexander Titus is a former data scientist at B.Next, an IQT Lab, where he developed analytical solutions to combat infectious disease outbreaks, and his training and graduate work focused on computational epigenomics of disease. In both contexts, his work combined domain expertise in biomedical science with computational tools to interrogate disease-related biology and to provide open-source solutions for science and public health. His research sits broadly at the intersection of academia, industry, and government and is focused on quantitative applications. He is driven in his pursuit to bridge ideas and solutions between fields to improve human health.

Prior to B.Next, Dr. Titus held a position as a graduate data science intern on the Alexa Machine Learning team at Amazon, which was preceded by his work as a data visualization consultant at Tableau Software. He also served as a research analyst in the department of Management Science and Engineering at Stanford University. Dr. Titus holds a PhD in quantitative biomedical sciences from Dartmouth College, and a BS in biochemistry, a BA in biology, and a minor in mathematics from the University of Puget Sound.


# Neil Vora

Neil M. Vora is a physician and epidemiologist with the CDC and is stationed at the NYC Department of Health and Mental Hygiene as a career epidemiology field officer. He joined the CDC in 2012 as an Epidemic Intelligence Service (EIS) officer, where he led several outbreak investigations for the agency, including the investigation of a newly discovered virus related to the smallpox virus in the country of Georgia and a human rabies case associated with organ transplantation. Dr. Vora was involved with the CDC response to the West African Ebola epidemic and deployed to Liberia during the height of the epidemic.

At the NYC Health Department, Dr. Vora oversees a variety of cross-cutting special infectious disease projects. His research interests are in emerging infectious diseases with animal origins. He has published in many peer-reviewed journals, including the New England Journal of Medicine, JAMA, and The Lancet; he has also appeared in media outlets including National Public Radio, C-SPAN, and the Wall Street Journal. Dr. Vora completed medical school at the University of California, San Francisco (UCSF), in 2009 and his internal medicine residency at Columbia University in 2012.

# Matt Walsh

Matt Walsh is an associate staff member in the Bioengineering Systems and Technologies group at MIT Lincoln Laboratory (MIT LL), a Department of Defense Research and Development Laboratory. Technical programs that he supports focus on biosensor development, threat attribution, warfighter health, and biological data assurance. He also monitors and assesses advances in synthetic biology. Prior to MIT LL, Mr. Walsh worked at MassBiologics of the University of Massachusetts Medical School, developing assays for the characterization of therapeutic monoclonal antibody production. He received his BA in chemistry from Skidmore College.

# Benjamin Winer

Benjamin Winer is a PhD candidate in the department of molecular biology at Princeton University, working with Dr. Alexander Ploss, where he develops humanized mouse models to investigate human liver tropic pathogens, such as hepatitis B and C and delta viruses, as well as malaria parasites. Prior to starting his graduate work at Princeton, he worked at the Laboratory of Bacterial Pathogenesis and Immunology at Rockefeller University with Dr. Vincent Fischetti, investigating the mechanisms of how bacteria acquire pan-drug resistance. To combat such bacteria, he also worked on the development of patented novel therapeutics derived from bacteriophage, viruses that infect bacteria. This technology was the foundation for a biotechnology company focused on developing therapies that can be used to tackle the rise of Gram-negative, pan–drug resistant bacteria.

Mr. Winer is interested in how health and science policy can shape public health preparedness and biosecurity, especially in the field of infectious diseases. He has won many awards for his scientific research, including 2 honorable mentions for the National Science Foundation graduate research fellowship (NSFGRF); a Grand Health Challenge graduate fellowship, which is co-sponsored by Princeton University and the Gates Foundation; and an F31 NIH/NRSA Ruth L. Kirschstein Predoctoral award from the National Institute of Allergy and Infectious Diseases (NIAID). Mr. Winer has an MS in biophysics from Johns Hopkins University and a dual BS in chemistry and biophysics from the College of William and Mary. He has a keen interest in international health development, as he co-founded a medical clinic in Cuje, Nicaragua, which has provided medical care for the past 13 years to a community of more than 3,000 households.

# ELBI 2018 Year in Review

## Spring Workshop, Washington, DC

### March 6-8

During the spring workshop, fellows met at the White House and received briefings from the National Security Council and Office of Science and Technology Policy staff; attended a day-long meeting including presentations by and discussion with subject matter experts; and visited the Department of Health and Human Services, where they received presentations from the ASPR staff. Attendees also participated in a networking dinner at the Westin Georgetown and heard from Jason Matheny, Director of IARPA.

## ELBI Research and Policy Symposium, Washington, DC

### July 25-26

The 2nd annual Research and Practice Symposium brought fellows and alumni together in Washington, DC, to share their biosecurity research and professional experiences with ELBI peers. Participants discussed a wide range of topics from international biosecurity to emerging biological risks, and they participated in a lively group discussion of Next Gen biosecurity systems led by Tom Inglesby.

## Fall Workshop, Oxford, UK

### September 24-27

For this year's fall workshop, fellows traveled to St. Hugh's College in Oxford, UK, where they attended a day-long meeting with presentations and discussion about biosecurity strategies, response to deliberate events, and potential pandemic pathogens. On day 2, following a morning of engaging discussion of international infectious disease outbreaks, the fellows were hosted for presentations and a tour at Oxford Nanopore Technologies. On day 3, the fellows listened to presentations on the role of WHO in health security, emerging biotechnology, and current issues pertinent to the Biological Weapons Convention. The workshop closed out with fellows participating in the Viral Storm tabletop exercise.

## Alumni Networking

During the year, alumni in the Washington, DC, area gathered twice at the Hotel George in Washington, DC, for 2 networking happy hours, featuring journalist Maryn McKenna and Jeremy Konyndyk of the Center for Global Development.

## Participation in the Meeting of States Parties to the Biological Weapons Convention

### December 3-6

Six ELBI alumni (from the 2018 cohort and prior years) were competitively selected to attend the Meeting of States Parties (MSP) to the BWC held at the United Nations in Geneva, Switzerland, in December. The ELBI delegation attended the meeting, participated in side events and discussions, and joined in the Center for Health Security–sponsored Global Forum on Scientific Advances Important to the BWC.

# ELBI Alumni

## Class of 2012

David Aaron
Jessica Appler
Patrick Ayscue
Stefanie Bumpus
Hillary Carter
Sheana Cavitt
Angela Fowlkes
Ashley Grant
Haroun Habib
Katharine Hagen
Carolyn Hall
Nicholas Kelley
Luis Martinez
Michael Montague
Rakesh Raghuwanshi
Sara Roszak
Patrick Rose
Yuliya Seldina
Calvin Siow
Halley Smith
Brendan Thomason
Anthony Treubrodt
Renee D. Wegrzyn
Stephen White
Jaime Yassif

## Class of 2014

Luke Beckman
Patrick Boyle
Joseph Buccina
Kelly Cappio
Elizabeth Carter
Cindi Corbett
Michael Crowley
Chas Eby
Rebecca Fish
Isabelle Goulet
Ellie Graeden
Daniel Grushkin
Rebecca Gurba
Heidi Hamling
Reid Harvey
Kristin Hatcher
Nathan Hillson
Gordon Lemmon
Julia Limage
Uri Lopatin
Ryan Newkirk
Michael Patterson
Darya Pilram
Richard Saint
Jacob Schafer
Tina Schoenberger
Jessica Tucker
Marci Wright

## Class of 2015

Seth Baum
John Billington
Lisa Brown
Remi Charlebois
Leremy Colf
Julia Dooher
Jeff Drocco
Victoria Earl
Nicholas Evans
Malaya Fletcher
Kim Gajewski
Kettner Griswold
Emily Kelley
Andrew Kilianski
Judy Kruger
Patricia Lau
Andrew Leifer
Kevin Martin
Amor Menezes
Allison Mistry
Amanda Moodie
Michelle Nalabandian
Alexandra Phelan
Caitlin Rivers
Erin Sorrell
Ryan Stringer
Justin Taylor
Amy Walker

## Class of 2016

Wendy Anne Beauvais
Anne Cheever
Francisco Cruz
Genya V. Dana
Cory Davenport
Natalie DeGraaf
Christine Farquharson
Mary Foote
Stephanie Griese
Trevor Hall
Mark Hansberger
Siddha Hover
Daniel Jackson
Dylan Jones
Samantha Kasloff
Mary Lancaster
Gregory Measer
Amber Murch
Reid Orth
Megan Palmer
Lianne Parr
Kristin Post
Hayley Severance
Claire J. Standley
Jen January Thierrien
Angela Vasa
Krista Versteeg
Jennifer Weisman

## Class of 2017

Martin Adams
Aurora Amoah
Brandy Burgess
Marija Cemma
Chris Chadwick
Jessica Dymond
Ngozi Erondu
Stuart Evenhaugen
Mary-Margaret Fill
Jeffrey Fortman
Jeffrey Freeman
Andrew Herr
Alison Hill
Adrienne Keen
Daniel Leifer
Brandon Lloyd Dean
Emily Lord
Syra Madad
Matthew Moe
Patricia Pacheco Hernandez
Justin Pahara
James Phillips
Saskia Popescu
Betsy Pugel
John Scarbeck
Carolyn Shore
Sapana Vora
Simon Weller

# Johns Hopkins Center for Health Security

## Emerging Leaders in Biosecurity Program Staff

While several Center for Health Security staff work on the Emerging Leaders in Biosecurity Initiative on a daily basis, virtually everyone in the Center has helped by providing ideas, contributing to meetings, reviewing applications, and advising fellows.

Tom Inglesby, MD, *Johns Hopkins Center for Health Security Director and Professor*

Anita Cicero, JD, *Johns Hopkins Center for Health Security Deputy Director*

**ELBI Program Manager**: Matthew Watson, *Senior Analyst and Research Associate*

**ELBI Deputy Program Manager**: Matthew Shearer, MPH, *Senior Analyst and Research Associate*

**ELBI Coordinator**: Alison Pack, *Staff Specialist*

**ELBI Events**: Andrea Lapp, *Director of Events*

**ELBI Program Staff**: Crystal Watson, DrPH, *Senior Scholar and Assistant Professor*

**ELBI Program Staff**: Caitlin Rivers, PhD, *Senior Scholar and Assistant Professor*

*Special thanks to Gigi Kwik Gronvall, PhD, Senior Scholar; Jennifer Nuzzo, DrPH, Senior Scholar; and Tanna Liggins and Maria Jasen (administrative staff).*

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621 E. Pratt Street
Suite 210
Baltimore, MD 21202

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