Panel: Addressing Environmental, Security, and Safety Gaps for Engineering Biology R & D

Chris Wozniak

Dr. Wozniak currently works as a biotechnology consultant for Wozniak Biopesticide Consulting, LLC. He received his training in Plant Pathology and Biochemistry at the University of Nebraska – Lincoln. He has worked for the Agricultural Research Service as a molecular biologist and as a National Program Leader at USDA-CSREES in areas of food safety and environmental risk assessment. Chris was a Biotechnology Special Assistant in the Office of Pesticide Programs at US EPA working with microbial, plant and mosquito products with pesticidal intent prior to retirement in 2021.

Kate Adamala

Kate Adamala is McKnight Presidential Fellow Associate Professor at the University of Minnesota. Her research focuses on synthetic cell engineering, with the aim of understanding chemical principles of biology, using artificial cells to create new tools for bioengineering, medicine, and foundational research. The interests of the lab span questions from the origin and earliest evolution of life, using synthetic biology to colonize space, to the future of biotechnology and medicine. Kate is a co-founder of the synthetic cell therapeutics startup Synlife, a Polymath Fellow of the Geneva Center for Security Policy, co-chair of the EBRC Security Working Group, and co-founder and coordinator of the international synthetic cell engineering consortium Build-a-Cell.
Lab info: protobiology.org.

Leyma P. De Haro

Dr. Leyma P. De Haro received a B.S. in Biochemistry from California State University, Los Angeles, and holds a Ph.D. in Biomedical Sciences from the University of New Mexico. She is a Registered Biosafety Professional (RBP) by ABSA International. She completed two postdoctoral fellowships, including one at Los Alamos National Laboratory. Dr. De Haro worked at Sandia National Laboratory, in the internationally renowned Global Chemical and Biological Security Team, where she specialized in Biosafety and Biosecurity on a global scale. She is currently a senior scientist at Merrick & Co. Dr. De Haro has over 15 years post Ph.D. experience as a scientist, helping laboratories and organizations enhance their biosafety and biosecurity practices. Her background in innovative scientific research enables her to understand the unique safety challenges laboratories and organizations face in today’s rapidly evolving world of life sciences. With a keen focus on fostering a culture of responsibility and

safety, Dr. De Haro is committed to promoting best practices in biosafety and biosecurity worldwide, supporting the life sciences community in pursuing groundbreaking discoveries and innovations.

Relevant recent publications in AI:
Book:

- Biosecurity in the Age of Synthetic Biology. CRC Press (September 2024)
    - Book Chapter:
    - 1. Security Risk Assessment of Research Self-Driving Laboratories (SDLs). CRC Press, accepted
- Published Primary Research Articles:
    - 1. De Haro L.P. Using Embodied AI Agents to Automate Biorisk Management Tasks in High-Containment Laboratories. Applied Biosafety (2025-in press).
    - 2. De Haro L.P. Biosecurity Risk Assessment for the Use of Artificial Intelligence in Synthetic Biology.
- Applied Biosafety (2024), (29)2. DOI: 10.1089/apb.2023.0031 (impact factor: 1.5, citations: 1).

Vaughn Cooper

Vaughn Cooper, Ph.D. is an evolutionary biologist and microbiologist. He is currently Professor of Microbiology and Molecular Genetics, and Computational and Systems Biology, at the University of Pittsburgh, School of Medicine. He co-founded and until recently was Director of the Center for Evolutionary Biology and Medicine (CEBaM), which works to catalyze research and education at the interface of these disciplines. He's also a Fellow of the American Academy of Microbiology, an elected Board member of the American Society of Microbiology (ASM), and is President-Elect of ASM in 2025-6. The Cooper laboratory studies how potential pathogens evolve to adapt to new hosts and environments, including by forming biofilm or gaining antimicrobial resistance. Recently, Dr. Cooper joined a team of scientists considering the potential risks of mirror life and is a board member of the Mirror Biology Dialogue Fund. We are proud to have founded EvolvingSTEM (http://evolvingstem.org), a comprehensive educational program that provides authentic classroom research experiences for thousands of middle and high school students in which they conduct a microbiology experiment that demonstrates evolution in action. The major goal of EvolvingSTEM is to help students see themselves as scientists and join the STEM workforce.

Panel: National Security Commission on Emerging Biotechnology (NSCEB) Panel

Sam Weiss Evans

Sam Weiss Evans is a Senior Policy Advisor for the National Security Commission on Emerging Biotechnology (NSCEB), where he focuses on efforts to prevent misuse and promote responsible innovation. Prior to joining NSCEB, Sam was a Senior Research Fellow at Harvard University, jointly with the Kennedy School of Government's Program on Science, Technology & Society (STS), and the School of Engineering and Applied Sciences (SEAS).

He has spent the past twenty years studying and building experimental governance capacity in bioengineering and several other areas of emerging technology. His experiments ran the gamut of the research and innovation life cycle, as well as the scale from personal to international levels of governing. Early-stage training of scientists and engineers included redesigning the undergraduate engineering curriculum at Harvard and helping lead the Human Practices Committee with the international Genetically Engineered Machines (iGEM) competition. Experiments in funding included advising DARPA on its Safe Genes Program and helping to run the Policy and Practices component of the National Science Foundation's Synthetic Biology Engineering Research Center (Synberc). Experiments in national governance included being on the Council of the Engineering Biology Research Consortium and working closely with the Department of Commerce's Emerging Technology Technical Advisory Committee on matters related to export controls.

Sam's academic background includes a focus on science and technology studies, critical security studies, and organizational analysis. He holds a B.A. in Physics and Philosophy from St. Olaf College, a master's in management research from Oxford University. His D.Phil., also from Oxford, was a study of the dual use list modification processes of the Wassenaar Arrangement, a multilateral export control regime for conventional arms and dual use goods and technologies. He has also held academic positions in the STS Programs at the University of California, Berkeley and Tufts University. He maintains a Research Affiliate positions with the Program on Emerging Technology at MIT.

Steven Moss

Steven Moss is a Senior Policy Advisor for the National Security Commission on Emerging Biotechnology (NSCEB) where he focusses on policy around the convergence of emerging areas of science and technology with biotechnology. Prior to joining NSCEB, Steven was a Senior Program Officer at the National Academies of Sciences, Engineering, and Medicine (NASEM). At NASEM he worked on their Board

on Life Sciences, focused on a portfolio of projects related to advancing the bioeconomy and the future of biotechnology. Steven comes from a laboratory background, having spent 10 years in chemistry and biology laboratory settings. Much of his lab work focused on understanding the molecular mechanisms of disease with projects on infectious bacteria, cancer, and chronic pain. Steven also serves as the Chair of the American Chemical Society's Committee on Environment and Sustainability and a judge for the international Genetically Engineering Machine (iGEM) competition. Steven holds a Ph.D. in Chemistry and Chemical Biology from the University of California, San Francisco, and a B.S. in Biochemistry from American University.

Caitlin Frazer

Caitlin Frazer is the Executive Director of the National Security Commission on Emerging Biotechnology. In this capacity, she leads the staff of the Commission in supporting the Commissioners in advising Congress on policy issues at the intersection of biotechnology, national security, and economic competitiveness. She previously served as Legislative Director to Senator Jon Ossoff (GA), a member of the Senate Intelligence Committee. She stood up the Office of Representative Chrissy Houlahan (PA-06) and served as her chief policy advisor as a member of the Armed Services and Foreign Affairs Committees. Earlier in her career, Caitlin was National Security Advisor to Senator Bob Casey (PA) and a policy advisor in the State Department's Bureau of South and Central Asian Affairs. She was a Presidential Management Fellow and holds a BA and MPP from the University of Virginia.

Panel: Artificial Intelligence/ Automation Convergence in Engineering Biology

Gigi Gronvall

Dr. Gronvall is a Professor in the Department of Environmental Health and Engineering at the Johns Hopkins Bloomberg School of Public Health and a Senior Scholar at the Johns Hopkins Center for Health Security. She is an immunologist by training. During the COVID-19 pandemic, she led the Center's efforts to track the development and marketing of diagnostic tests. She leads work on improving indoor air quality to reduce pathogen transmission, including guidance for K-12 schools and the development of a Model State Indoor Air Quality Act. She also has written about the scientific response to the COVID-19 pandemic, the contested origin of SARS-CoV-2, and implications for national and international security. Dr. Gronvall is the author of *Synthetic Biology: Safety, Security, and Promise*. She is a member of the Department of State's International Security Advisory Board; NIH's Novel and Exceptional Technology and

Research Advisory Committee (NExTRAC); and the National Academies' Forum on Microbial Threats.

Michael Imperiale

Dr. Michael Imperiale is currently the Arthur F. Thurnau Professor Emeritus of Microbiology and Immunology at the University of Michigan. Dr. Imperiale's research interests focus on the study of DNA tumor viruses. His laboratory developed widely used in vitro models with which to study the biology of polyomaviruses in healthy individuals and immunosuppressed patients. He has served an Editor of the *Journal of Virology, PLoS Pathogens,* and *mBio*. In 2015, he was appointed as Founding Editor-in-Chief of *mSphere*, published by the American Society for Microbiology.
He has served on several National Academies of Science, Engineering, and Medicine committees addressing the issues of responsible conduct of research, dual use life sciences research, and the intersection of science and security, and has published extensively on these topics. This includes chairing a study published in 2018 entitled "Biodefense in the Age of Synthetic Biology," and co-chairing a study on the benefits and risks associated with the application of AI to biology, "The Age of AI in the Life Sciences: Benefits and Biosecurity Considerations."
He previously served as an inaugural member of the National Science Advisory Board for Biosecurity from 2005-2014; on the Planetary Protection Subcommittee at NASA; the Committee on Science, Technology, and Law at the National Academies; and the Board of Directors of the Van Andel Institute Graduate School. In 2009 Dr. Imperiale was the recipient of the University of Michigan Distinguished Faculty Achievement Award and in 2016 he received the Rackham Distinguished Graduate Mentor Award. He was elected as a Fellow of the American Academy of Microbiology in 2010 and as a Fellow of the American Association for the Advancement of Science in 2011. He undertook his undergraduate and graduate education at Columbia University, receiving a B.A. in 1976, M.A. in 1978, and Ph.D. in 1981, all in Biological Sciences.

Panel: Industry Perspectives on Environmental, Safety, and Security Considerations for Engineering Biology

Steve Evans

Dr. Steven Evans is a Senior Technical Fellow at BioMADE.org, a Department of Defense Manufacturing Innovation Institute. He helped conceptualize and stand up BioMADE, then served as interim CTO during its inaugural year. Dr. Evans has nearly 40 years' experience in industrial biotechnology in small and large companies, with 17 years focused on biotech public-private partnerships. Accomplishments include

developing and manufacturing the first registered engineered microbial biopesticide, creating multiple high-capacity heterologous protein expression platforms, enabling a synthetic biology workflow rapidly producing zinc finger nucleases for plant genome editing, and establishing advanced bioanalytical capabilities in mass spectrometry and microscopy. He participated in several Industry-University Cooperative Research Centers and was Chair of the industrial advisory board of NSF-Synthetic Biology Research Center, providing industrial insights into its Ethical, Legal, and Social Implications (ELSI) Thrust. He continued on to the inaugural EBRC leadership team. Dr. Evans was Vice Chair of the BIO Organization's synthetic biology working group. He was an Ad Hoc advisor to the UN Convention on Biological Diversity on-line forum on synthetic biology and digital sequence information, and engaged domestically on ELSI analysis of a DARPA program. He served as a committee member on the National Academies of Sciences Preparing for Future Products of Biotechnology and Safeguarding the Bioeconomy reports.

Lauren Junker

Lauren Junker has been an innovation scout for Industrial Biotechnology Research at BASF since 2019. She has been a leader in the Industrial Biotechnology research group at BASF for 7 years, where she has led teams focused on microbiome research for personal care, microbial control solutions for personal care and animal nutrition, and fermentation process optimization. Lauren is interested in technologies and partnerships that can accelerate bioscience research at BASF in the areas of industrial biotechnology, including industrial enzyme and biocatalyst engineering, strain engineering for bio-based chemical production, and fermentation process optimization. Her previous roles included serving as a microbiologist and clinical research scientist within Johnson & Johnson's Consumer Products Division. Lauren earned her B.S. in Biotechnology from Cook College, Rutgers University, and then obtained a Ph.D. in Microbiology from Cornell University. She completed a postdoctoral fellowship at Harvard Medical School, where she conducted research on microbial biofilms.

James Diggans

James Diggans leads policy and biosecurity for Twist Bioscience, a DNA synthesis company based outside of San Francisco and chairs the International Gene Synthesis Consortium. He holds a PhD from George Mason University in Computational Biology and Bioinformatics and has worked in target discovery, molecular diagnostic development and biodefense. At Twist, he created and leads the company's biosecurity program and leads bioinformatics in the Advanced Development group on work including the storage of digital data in DNA.

Panel: Funders Perspectives of Environmental, Safety, and Security Considerations for Engineering Biology

Valerie Martindale

Dr. Valerie Martindale is Army Research Office Competency Co-lead for Biology and Biotechnology Sciences and for Energy Sciences. In this role, she oversees program management of extramural research in a broad area that encompasses biology, physiology, microbiology, genetics, and biochemistry, as well as synthetic biology, battery science, power and energy, and the interfaces of these with other disciplines. Dr. Martindale served in the US Air Force for 22 years as an Aerospace Physiologist, where she led programs in Aerospace Physiology, Human Effectiveness, Human Performance, and Human Systems Integration and supported military medical research. After retirement from active duty, Dr. Martindale supported the Army Telemedicine and Advanced Technology Research Center and served as International Program Manager for Synthetic Biology. She is a fellow and past president of both the Aerospace Medical Association (AsMA) and the Aerospace Human Factors Association, and an Academician in the International Academy of Aviation and Space Medicine. She is a Board Certified Aerospace Physiologist. Dr. Martindale holds a PhD in Developmental Genetics and Anatomy from Case Western Rerserve University, a BA in Integrated Science and MS in Neurobiology and Physiology, both from Northwestern University.

Ernie Glover

Ernie Glover is a Program Director at the Alfred P. Sloan Foundation where he runs two grant-making programs, matter-to-life and small-scale fundamental physics. Prior to joining the Sloan Foundation he was at the Gordon and Betty Moore Foundation where he made grants supporting research focused on quantum materials and fundamental physics. Before that, Ernie had a career at the Lawrence Berkeley National Laboratory where he worked as a staff scientist at the Advanced Light Source and helped pioneer techniques that use x-rays to visualize how matter evolves on the natural length (Angstrom) and time (femtosecond) scales relevant to atomic motion. Over the years Ernie’s research has spanned topics that include studying how nanoparticles form during femtosecond laser ablation, demonstrating that light can be used to induce x-ray transparency, and demonstrating x-ray/optical wave mixing, a technique that allows x-rays to selectively probe the chemically important valence electrons in a material. Ernie attended Brown University where he received a B.A. in religious studies and a B.S. in electrical engineering. He was an American Physical Society Apker Award Finalist and was awarded the Daniel P. Ionata Undergraduate Thesis Award. Ernie was an AT&T Bell Laboratories Cooperative Research Fellow and he received a Ph.D. in physics from

the University of California at Berkeley. He was also a Department of Energy Distinguished Postdoctoral Research Fellow and a University of California Presidential Postdoctoral Fellow.

Andrea Hodgson

Andrea Hodgson is the Director of Biosciences at Schmidt Sciences. The Biosciences Institute aims to advance our understanding of biology and facilitate the transition of biological innovations into the real world for public benefit, with a current focus on enabling a resilient, circular bioeconomy. Previously, she was a senior program officer on the Board of Life Sciences at the U.S. National Academies of Sciences, Engineering, and Medicine. She joined the Academies as a Christine Mirzayan Science & Technology Policy Fellow in 2016. During her tenure, her portfolio included work on biotechnology regulations, biosecurity, the microbiome, environmental health and risk assessment. Andrea conducted postdoctoral training in Biochemistry and Molecular Biology at the Johns Hopkins Bloomberg School of Public Health where she also obtained her PhD in Molecular Microbiology & Immunology. She has a BS in Microbiology from the University of Rhode Island.

Panel: Public Trust and Perception: Informing Safety, Security, and Environmental Risks

Michael Zaroukian

Michael Zaroukian, MD, PhD, MACP, FHIMSS, FAMIA is an internal medicine specialist, primary care physician, clinical informaticist, immunologist, and Professor Emeritus of Medicine at Michigan State University. He has over 20 years of experience as a health system executive and Chief Medical Information Officer (CMIO). Dr. Zaroukian co-chairs the governor-appointed Health IT Commission, Michigan Department of Health and Human Services. He is also Governor-elect of the Michigan Chapter of the American College of Physicians. Dr. Zaroukian is past chair of the Health Information and Management Systems Society Board of Directors. He has served on informatics-related National Academy of Medicine committees, ONC Health IT Policy and Standards Committee workgroups and taskforces, the AMA Health IT Advisory Group, and the American College of Physicians Medical Informatics Committee. He currently serves on the American Medical Informatics Association Public Policy Committee and the Climate, Health and Informatics Working Group.

Christina Agapakis

Christina Agapakis, Ph.D. is a synthetic biologist, writer, and creative director known for her pioneering work at the intersection of biology, design, and society. Currently, she is the founder and CEO of Oscillator, a consultancy that brings clarity and creativity to the intersection of biology and technology. As the former Head of Creative at Ginkgo Bioworks, she led cross-disciplinary collaborations that explored how biotechnology can be made more transparent, ethical, and inclusive. Christina earned her Ph.D. in biological and biomedical sciences from Harvard University, where her research spanned microbial evolution, symbiosis, and the design of living systems. A passionate advocate for public engagement with science, Christina has written extensively on the cultural and ethical dimensions of biotechnology and has shown collaborative art-science work in exhibitions around the world. She is especially interested in how narratives shape public trust in science, and how synthetic biology can be practiced in ways that reflect societal values, not just technical possibilities. Today she is the founder and CEO of Oscillator, a consultancy that brings clarity and creativity to the intersection of biology and technology.

Dietram Scheufele

Dietram A. Scheufele is the Taylor-Bascom Chair and Vilas Distinguished Achievement Professor at the University of Wisconsin-Madison. He is also an Investigator in the Morgridge Institute for Research, and a Distinguished Research Fellow at the University of Pennsylvania's Annenberg Public Policy Center. His work examines the social effects of emerging science and technology. Scheufele is an elected member of the American Academy of Arts and Sciences and the German National Academy of Science and Engineering, and a fellow of the American Academy of Political & Social Science, the American Association for the Advancement of Science, the International Communication Association, and the Wisconsin Academy of Sciences, Arts & Letters. Scheufele's current research examines how algorithmically curated information environments fundamentally reshape how we all make sense of the world around us. His most recent publications have included work on mis- and disinformation, open science, and the societal impacts of emerging technologies like AI and CRISPR. His consulting portfolio includes work for DeepMind, Porter Novelli, PBS, WHO, and the World Bank