NATIONAL ACADEMIES Sciences Engineering Medicine

Openness, International Engagement, and the Future of the Federally Funded Science & Technology Research Enterprise – A Workshop

November 14-15, 2022 (Monday-Tuesday)

Bio Sketches

SESSION ONE: Overview and Framing

Hannah Luise Buxbaum, Indiana University

Hannah Buxbaum is Vice President for International Affairs at Indiana University. She is also Professor of Law and John E. Schiller Chair at IU's Maurer School of Law, where she previously held leadership roles including as interim dean (2012-2014). As Vice President she advances global engagement across IU's seven campuses, including at the Bloomington campus, which hosts 3 Department of Defense-funded Language Flagship Programs and 18 Department of Education Title VI programs, 8 of which are designated as National Resource Centers. She oversees the offices that manage international admissions and student services, study abroad, international partnerships, and international development, as well as the university's five Global Gateway offices. Buxbaum serves on the Fulbright Scholar CIES Advisory Board and the AIEA's Public Policy Committee, and is currently chair of the Big Ten Academic Alliance's Senior International Officer group.

Buxbaum is an elected member of the American Law Institute and the International Academy of Comparative Law, and in 2019 was appointed as the U.S. member of the Curatorium of the Hague Academy of International Law. She holds a B.A. from Cornell University, a J.D. from Cornell Law School, and an LL.M. from the University of Heidelberg.

J. Michael McQuade, Carnegie Mellon University

J. Michael McQuade is Special Advisor to the President of Carnegie Mellon University (CMU), providing strategic advice on the University's research enterprise and advocating for the role that science, technology and innovation play nationally and globally. From 2019 to 2021 he served as the Vice President for Research at CMU. He previously served as Senior Vice President for Science & Technology at United Technologies Corporation, Vice President of 3M's Medical Division and President of Eastman Kodak's Health Imaging Business. Dr. McQuade served as a member of the President's Council of Advisors on Science and Technology, the Secretary of Energy Advisory Board, and as a member of the Defense Innovation Board.

Tobin Smith, Association of American Universities

Tobin (Toby) Smith oversees matters related to science and innovation policy, broader impacts of science, and AAU's international activities. He shares responsibility for matters concerning research costs and other regulatory and compliance issues, including facilities and administrative costs, export controls, scientific openness and security, public access to research results, and technology transfer. He also staffs the AAU Senior Research Officers (SRO) constituent group. Toby previously worked as a federal relations representative for the University of Michigan and for MIT. He began his career on Capitol Hill as a legislative assistant to Congressman Bob Traxler (D-MI). Toby serves on the Advisory Board of the International Network for Advancing and Evaluating the Societal Impact of Science (AESIS); is a member of the Council of Experts for the NSF sponsored Center for Advancing Research Impact in Society (ARIS); and is co-chair of Engaging Scientists in Engineers in Policy (ESEP), an ad hoc alliance of organizations focused on helping scientists and engineers to effectively engage in the policy making process at all levels of government. Toby writes and speaks widely on issues of science policy. He is the co-author of a 2008 book on national science policy titled, Beyond Sputnik – U.S. Science Policy in the 21st Century. He is active in AAAS where he is honorific fellow and officer of the Societal Impacts of Science and Engineering section (Section X). He also serves as a member of the AAAS Committee on Science, Engineering and Public Policy (COSEPP). Toby holds a Master's degree in Legislative Affairs from George Washington University, and a Bachelor's degree in General Studies (BGS) from the University of Michigan.

Keith Crane, Institute for Defense Analysis-STPI
Dr. Keith W. Crane is an economist at the Institute of Defense Analyses (IDA's) Science and Technology Policy Institute (STPI). At STPI, Dr. Crane focuses on labor force issues in emerging technologies, space policy, and energy and environmental technologies. Prior to coming to STPI in 2016, Dr. Crane was Director of the RAND Corporation's Environment, Energy, and Economic Development Program. In addition to his work on science policy, energy, and the environment, , he has written extensively on the economies of Central and Eastern Europe and the former Soviet republics, post-conflict nation building, and the Chinese economy. From 1990 to 2002, Dr. Crane was Chief Operating Officer and Director of Research at PlanEcon, Inc., a Washington, D.C.-based research and consulting firm that specialized in forecasting developments in the macroeconomics and the energy and automotive sectors of the economies of Central and Eastern Europe and the post-Soviet republics. In the fall of 2003, Dr. Crane served as an economic policy advisor to the Coalition Provisional Authority in Baghdad.

Abby Goldman, Institute for Defense Analysis-STPI
Abby R. Goldman is a research staff member at STPI. She has a range of materials science expertise, including materials synthesis, characterization and nanotechnology. Before joining STPI, her research focused on learning from biomineralization – the study of how organisms grow crystals – to create new, functional magnetic and electronic materials. Prior to earning her doctorate, she received a Fulbright Fellowship to the Technion-Israeli Institute of Technology in the Department of Materials Engineering. Abby holds a doctorate and a master's in materials science and engineering from Cornell University and a bachelor's in physics from Mount Holyoke College.

Victor McCrary, University of the District of Columbia

McCrary currently serves as Vice President for Research and Professor of Chemistry at the University of the District of Columbia. Previously, he was Vice Chancellor for Research at the University of Tennessee, Knoxville and the first Vice President for Research and Economic Development and Professor of Chemistry at Morgan State University, Baltimore, MD. Prior to that, McCrary was the Business Area Executive for Science & Technology and principal professional staff at The Johns Hopkins University Applied Physics Laboratory where he directed internal research and development (IRAD) funding to develop new core competencies and innovations in the areas of national security and space technologies for civilian and military applications.

He started his career at AT&T Bell Laboratories-Murray Hill, as a post-doc and then Member of Technical Staff before being tapped to be a program manager with the Advanced Technology Program and becoming the first Chief of the Convergent Information Systems Division at the National Institute of Standards and Technology (NIST). At NIST, McCrary led the first efforts to develop industry standards for electronic books where he was a co-recipient of the US Department of Commerce's Gold Medal for his efforts. He is a former national president of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE) and a Fellow of the American Chemical Society.

SESSION TWO: International STEM Talent and U.S. Research Competitiveness

Arthur Bienenstock, Stanford University

Arthur Bienenstock is Professor emeritus of Photon Science, Special Assistant to the President for Federal Research Policy and Director of the Wallenberg Research Link at Stanford University. He received his B.S. and M.S. degrees in Physics from the Polytechnic Institute of Brooklyn, and his Ph.D. degree in Applied Physics from Harvard University in 1962. He joined the Stanford faculty in 1967 and has served as Professor of Applied Physics, Professor of Materials Science and

Engineering, Vice Provost for Faculty Affairs (1972-77), Director of the Stanford Synchrotron Radiation Laboratory (1978-97), Associate Director of the Stanford Linear Accelerator Center (1992-97) and Vice Provost for Research and Graduate Policy (2003-6), From November, 1997 to January, 2001, he served as Associate Director for Science of the Office of Science and Technology Policy while on leave from Stanford. Prior to joining Stanford, Bienenstock was a National Science Foundation Postdoctoral Fellow at the Atomic Energy Research Establishment, Harwell, England (1962-3) and an Assistant Professor in Harvard University's Division of Engineering and Applied Physics (1963-7). His early research involved a broad range of theoretical studies of crystalline solids, with some experimental and theoretical X-ray studies of poorly crystallized and amorphous systems. While still at Harvard, he became increasingly interested in the properties of amorphous materials and gradually shifted towards experimental studies of atomic arrangements in these materials. This, in turn, led Bienenstock to recognize the great potential of X-ray synchrotron radiation (SR) for studying these arrangements. He turned his attention to the development of SR techniques for analysis of bulk and thin film amorphous materials, as well as to the development of increasingly powerful synchrotron radiation sources as director of the Stanford Synchrotron Radiation Laboratory (SSRL). His responsibilities as SSRL director led him increasingly into science policy and, subsequently, to the Office of Science and Technology Policy. He has published over 100 papers in scientific and science policy journals, and his graduate students and postdoctoral associates hold major research and leadership positions throughout the world.In 1968, Bienenstock was the first recipient of the Pittsburgh Diffraction Society's Sidhu Award. He received the Distinguished Alumnus Award of the Polytechnic Institute of New York Alumni Association in 1977, the Distinguished Service Award of theDepartment of Energy in 2005 and the Cuthbertson Award from Stanford University in 2009. He is a fellow of the American Physical Society, the Institute of Physics, the American Association for the Advancement of Science and the California Council of Science and Technology. He was awarded honorary PhDs by Polytechnic University (1998) and Lund University (2006). In March, 2010, he was elected a Foreign Member of the Swedish Royal Academy of Engineering Sciences. He was president of the American Physical Society (2008) and chair of the Council of Scientific Society Presidents (2010). Bienenstock was appointed to the Board in 2010 and reappointed as a member of the class of 2016-2022. He currently serves as a consultant to the Board.

Patricia Falcone, Lawrence Livermore National Laboratory

Patricia Falcone is the Deputy Director for Science and Technology at the Lawrence Livermore National Laboratory (LLNL). She is the principal advocate for the Lab’s science and technology base and oversees the strategic development of the Lab's capabilities. She is responsible for

LLNL's collaborative research with academia and the private sector, as well as its internal investment portfolio. Falcone joined LLNL in 2015 after six years at the White House Office of Science and Technology Policy (OSTP), where she served as the Senate-confirmed Associate Director of OSTP for National Security and International Affairs. In that capacity, she led a team that advised on the science and technology dimensions of national security policy deliberations and on federal support of national security research and development. Earlier, Falcone held technical and management positions at Sandia National Laboratories in Livermore, California, including Distinguished Member of the Technical Staff, and senior manager for Systems Analysis and Engineering. Her work at Sandia focused on the assessment of new technologies for mission applications and on advanced energy conversion technologies. Falcone chairs the advisory committee for the Department of Mechanical and Aerospace Engineering at Princeton University and the board of trustees of the Georgia Tech Research Corporation. She is a commissioner on the National Commission on Innovation and Competitiveness Frontiers led by the Council on Competitiveness and a member of the Leadership Council of the Government-University-Industry Research Roundtable of the National Academies of Science, Engineering and Medicine. Falcone earned a B.S.E. in aerospace and mechanical sciences at Princeton University, and M.S. and Ph.D. degrees in mechanical engineering from Stanford University.

Esther Brimmer, NAFSA Association of International Educators

Esther Brimmer, DPhil, serves as the executive director and chief executive officer of NAFSA: Association of International Educators. Dr. Brimmer's distinguished career includes three appointments within the U.S. Department of State, serving most recently as the assistant secretary for international organization affairs from April 2009 to 2013. Prior to joining NAFSA, Dr. Brimmer was professor of practice of international affairs at George Washington University's Elliott School of International Affairs where she served a two-year term as the J.B. and Maurice C. Shapiro Professor. She was also an adjunct senior fellow for international institutions at the Council on Foreign Relations, and a senior adviser at McLarty Associates. She was previously deputy director and director of research at the Center for Transatlantic Relations at the Johns Hopkins University's Paul H. Nitze School of Advanced International Studies (SAIS) from 2001 to 2009, and was a member of the SAIS faculty. She also taught at the College of Europe in Belgium, and from 1995 to 1999, she was a senior associate at the Carnegie Commission on Preventing Deadly Conflict. Earlier, she served on Capitol Hill as a legislative analyst for the Democratic Study Group in the U.S. House of Representatives. Immediately after earning her

doctorate from Oxford University, she spent two years as a management consultant with McKinsey & Company.

SESSION THREE: International Collaborations: Benefits and Challenges
Thomas Mason, Los Alamos National Laboratory

Dr. Thomas (Thom) Mason became the 12th Director of Los Alamos National Laboratory and President of Triad National Security, LLC in November 2018. The Laboratory is a principal contributor to the U.S. Department of Energy mission to maintain the nation's nuclear weapons stockpile. For the past 30 years, Thom has been involved in the design and construction of scientific instrumentation and facilities and the application of nuclear, computing, and materials sciences to solve important challenges in energy and national security. Most recently Thom was the Senior Vice President for Global Laboratory Operations at Battelle where he had responsibility for governance and strategy across the six National Laboratories that Battelle manages or co-manages. Prior to joining Battelle, Thom worked at Oak Ridge National Laboratory (ORNL) for 19 years, including 10 years as the Laboratory Director. Under his leadership, ORNL saw significant growth in programs, new facilities, and hiring while achieving record low safety incident rates. Before becoming Laboratory Director, he was Associate Laboratory Director (ALD) for Neutron Sciences, ALD for the Spallation Neutron Source (SNS), and Director of the Experimental Facilities Division. During his time in Oak Ridge, Thom was active in the community serving as Chair of the Oak Ridge Public Schools Education Foundation as well as Innovation Valley, the Knoxville-Oak Ridge area regional economic development organization. He moved to ORNL from the University of Toronto where he was a faculty member in the Department of Physics and previously worked as a Senior Scientist at Risø National Laboratory and a Postdoc at AT&T Bell Laboratories. Thom holds a Ph.D. in Experimental Condensed Matter Physics from McMaster University and a BSc in Physics from Dalhousie University.

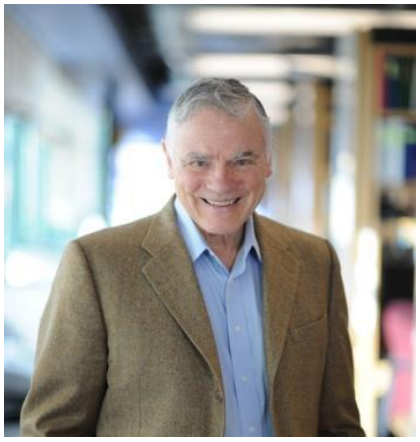
James Crowe, Vanderbilt University

James Crowe has a broad portfolio of work in the area of viral immunology and antibody sciences, with the goal to discover mechanisms of immunity important to developing new therapeutics and vaccines. Dr. Crowe received his MD degree from the University of North Carolina at Chapel Hill, where he also completed his pediatrics residency. Following his clinical training, Dr. Crowe received five years of post-doctoral training in the laboratory of Infectious Diseases at the NIH. He completed infectious diseases fellowship training in 1996 at Vanderbilt and has run an independent laboratory at Vanderbilt since that time. He is currently Professor of Pediatrics and of Pathology, Microbiology and Immunology, and the Ann Scott Carell Chair, Vanderbilt University Medical Center. The laboratory's work has been published in over 300 publications in high-quality science journals including *Cell*, *Science* and *Nature* and leading medical journals including the *New England Journal of Medicine* and *JAMA*. Dr. Crowe was elected to the National Academy of Medicine in 2014 and National Academy of Inventors in 2017. He has been the recipient of investigator awards from the March of Dimes, American Society for Microbiology, Pediatric Infectious Diseases Society, and Society for Pediatric Research. He was awarded the Judson Infectious Daland Prize of the American Philosophical Society, the Oswald Avery Award of the IDSA, the E. Mead Johnson Award for Excellence in Pediatrics, the Outstanding Investigator Award of the American Federation for Medical Research, the Norman J. Siegel Award of the American Pediatric Society, the Samuel Rosenthal Prize for Excellence in Academic Pediatrics, the Stanley J. Korsmeyer Award of American Society for Clinical Investigation, the Distinguished Medical Alumnus Award from UNC School of Medicine, Chapel Hill, NC. He is an elected Fellow of AAM, AAAS, ASCI and AAP, IDSA, APS, and others. His research team was selected as Best Academic Research Team at the 11th Annual Vaccine Industry Excellence Awards. He was awarded the inaugural 2019 Merck Future Insight Prize, a 1M Euro prize shared with Pardis Sabeti. He is the Founder of IDBiologics, Inc., an early stage biotech company developing human monoclonal antibodies for infectious diseases.

Patricia McBride, CERN

Patricia McBride is a distinguished scientist at the Fermi National Accelerator Laboratory (Fermilab) and deputy spokesperson for the CMS collaboration at the Large Hadron Collider at CERN in Geneva, Switzerland. Previously, she served as head of Fermilab's Particle Physics Division and its scientific computing programs. Patricia has been a member of the CMS collaboration for more than a decade, serving as the head of Fermilab's CMS efforts and managing the U.S. CMS Operations Program, which oversees U.S. contributions to CMS experiment operations. During CMS's commissioning phase, she served as deputy computing coordinator, working with scientists and computing specialists from around the globe to establish the high-throughput computing resources needed for analysis of the large volume of CMS data. She has served on many national and international committees, and was the chair of the Division of Particles and Fields of the American Physical Society (APS), the U.S. Liaison Committee of the International Union of Pure and Applied Physics (IUPAP) and the IUPAP C11 Commission for Particles and Fields. She is currently a member of the AURA NCOA Management Oversight Council, J-PARC International Advisory Committee and AUI Visiting Committee for NRAO. She was elected an APS and an AAAS Fellow in 2009.

Lee Hood, Institute for Systems Biology



A world-renowned scientist and recipient of the National Medal of Science in 2011, Dr. Leroy

Hood co-founded the Institute for Systems Biology (ISB) in 2000 and served as its first President from 2000-2017. In 2016, ISB affiliated with Providence St.Joseph Health (PSJH) and Dr. Hood became PSJH's Senior Vice President and Chief Science Officer. He is also Chief Strategy Officer and Professor at ISB.
Dr. Hood is a member of the National Academy of Sciences, the National Academy of Engineering, and the National Academy of Medicine. Of the more than 6,000 scientists worldwide who belong to one or more of these academies, Dr. Hood is one of only 20 people elected to all three. He received his MD from Johns Hopkins University School of Medicine and his PhD in biochemistry from Caltech. Dr. Hood was a faculty member at Caltech from 1967-1992, serving for 10 years as the Chair of Biology. During this period, he and his colleagues developed four sequencer and synthesizer instruments that paved the way for the Human Genome Project's successful mapping and understanding of the human genome. He and his students also deciphered many of the complex mechanisms of antibody diversification. In 1992, Dr. Hood founded and chaired the Department of Molecular Biotechnology at the University of Washington, the first academic department devoted to cross-disciplinary biology. Dr. Hood has co-founded 17 biotech companies including Amgen, Applied Biosystems, Rosetta and Arivale. His many national and international awards include the Lasker Prize, the Kyoto Prize, and the National Medal of Science. Currently, he is the CEO of Phenome Health and Co-Founder and Professor at the Institute of Systems Biology in Seattle.

DAY ONE KEYNOTE

Ernest Moniz, Nuclear Threat Initiative

Former U.S. Secretary of Energy Ernest J. Moniz was named co-chair and chief executive officer by the Board of Directors of the Nuclear Threat Initiative (NTI) in March 2017. He began serving in June 2017.Ernest J. Moniz served as the thirteenth United States Secretary of Energy from 2013 to January 2017. As Secretary, he advanced energy technology innovation, nuclear security and strategic stability, cutting-edge capabilities for the American scientific research community, and environmental stewardship. He strengthened the Department of Energy (DOE) strategic partnership with its seventeen national laboratories and with the Department of Defense and the broader national security establishment. Specific accomplishments included producing

analytically-based energy policy proposals that attracted bipartisan support and implementing legislation, leading an international initiative that placed energy science and technology innovation at the center of the global response to climate change, and negotiating alongside the Secretary of State the historic Iran nuclear agreement. He reorganized a number of DOE program elements, elevated sound project and risk management, and strengthened enterprise-wide management to improve mission outcomes. Dr. Moniz served on the Massachusetts Institute of Technology faculty from 1973 until becoming Secretary of Energy in 2013 and is now the Cecil and Ida Green Professor of Physics and Engineering Systems emeritus and Special Advisor to the MIT President. He is the inaugural Distinguished Fellow of the Emerson Collective and CEO of the non-profit Energy Futures Initiative

SESSION FOUR: Practical Considerations and Risks/Benefits of Alternative Approaches

Chaouki Abdallah, Georgia Institute of Technology

Chaouki T. Abdallah is the Executive Vice President for Research (EVPR) at the Georgia Institute of Technology. Abdallah serves as chief research officer for the Institute, providing overall leadership for the research, economic development, and related support units within Georgia Tech. As a direct report to President Ángel Cabrera and a member of the president's cabinet, he serves as chief research officer for the Institute. This position provides overall leadership for the more than $1 billion annual research enterprise that includes the Georgia Tech Research Institute (GTRI), 10 interdisciplinary research institutes (IRIs), as well as economic development, and related support units within Georgia Tech. He also serves on the executive committee of the Council on Research for the Association of Public & Land-Grant Universities (APLU), the executive committee for the Government-University-Industry Research Roundtable (GUIRR), and the advisory committee for the Center on Measuring University Performance (MUP). Abdallah came to Georgia Tech from the University of New Mexico, where he served as the university's 22nd president, as provost and executive vice president for academic affairs, as well as department chair of the electrical and computer engineering (ECE) department. During his tenure, Abdallah oversaw long-range academic planning and efforts to improve student success, as well as retention-achievement and graduation achievement rates. He conducts research and teaches courses in the area of systems theory with a focus on control, communications, and computing systems. His research has been funded by the National Science Foundation, the Air Force Office of Scientific Research, the U.S. Naval Research Laboratory, national laboratories, and various companies. Abdallah, who is fluent in English, French, and Arabic, is a senior member of IEEE and a recipient of that organization's Millennium Medal. Abdallah began his college career at the Faculté d'ingénierie of the Université Saint-Joseph in Lebanon, then obtained a Bachelor of Engineering (B.E.) degree from Youngstown State University in 1981, and a M.S. and Ph.D. in electrical engineering from Georgia Tech in 1982 and 1988, respectively.

Joseph Bankoff, Georgia Institute of Technology

Joe Bankoff was appointed Chair of the Sam Nunn School of International Affairs in July 2012 following six years as President & CEO of Atlanta's Woodruff Arts Center and 34 years as a senior litigation partner at the Atlanta-based law firm of King & Spalding where he founded and led the firm's Intellectual Property and Technology Practice. He served as the Nunn School Chair for 7 years and is now a Distinguished Professor of the Practice.

Mr. Bankoff's experience and expertise ranges across law and policy, economic development, legislation, fiscal planning, and global issues. He has served as Chair of the Board of the Midtown Alliance (the planning unit for Atlanta's exploding Midtown) and continues to serve on its Executive Committee. He now Chairs the Board of the Georgia Foreign Trade Zone, is Vice Chair of the National Court Appointed Special Advocates (CASA) for children in foster care and is the appointed Chair of the Fulton County Arts Council.

Mr. Bankoff received his Bachelor of Science in Industrial Management from Purdue University. He earned his Juris Doctor from the University of Illinois. In 1992, he took a sabbatical from his law firm to accept an appointment as a visiting scholar at the Max Planck Institute for Intellectual Property & Competition Law, Munich, Germany, where he worked on the development of the Satellite Directive for the European Union.

Kathryn Moler, Stanford University

Kathryn A."Kam" Moler is the Vice Provost and Dean of Research, the Marvin Chodorow Professor, and Professor of Applied Physics and of Physics at Stanford University. She conducts research in magnetic imaging, develops tools that measure nanoscale magnetic fields, and studies quantum materials and devices. Among other honors, she received a national Presidential Early Career Award for Scientists and Engineers, held a Packard Fellowship for Science and Engineering, received the William L. McMillan Award "for her fundamental studies of the superconducting pairing state, Josephson vortices, and the role of interlayer coupling in high-temperature superconductors," she is a Fellow of the American Physical Society, and a member of the National Academy of Sciences. To honor her sustained commitment to teaching, the American Association of Physics Teachers awarded her the Richtmyer Award for Outstanding Leadership in Physics Education, and Stanford appointed her as the Sapp Family Fellow in Undergraduate Education. She was previously the Senior Associate Dean of Natural Sciences in the School of Humanities and Sciences and the Director of the Stanford Nano Shared Facilities. She is a member of the NanoFront (TU-Delft/Leiden) Scientific Advisory Board, the Physics Frontier Center—Joint Quantum Institute Advisory Board, Co-Chair of the National Quantum Initiative Advisory Committee (NQIAC), and a member of NASEM (National Academies of Sciences, Engineering, and Medicine) National Science, Technology, and Security Roundtable.

Robert Hardy, Council on Government Relations

Robert Hardy is the Director of Research Security & Intellectual Property (RSIP) at the Council on Governmental Relations. Mr. Hardy has led COGR responsibility for university issues pertaining to federal contracting and technology transfer policies and regulations. Prior to coming to COGR in April 2001, Mr. Hardy was with the National Science Foundation (NSF) for over 30 years, serving in a variety of capacities During the last eight years of his NSF career he served as Director of the Division of Contracts, Policy and Oversight. Mr. Hardy holds a B.A. degree from Gettysburg College and J.D. from Catholic University, and is a member of the Bars of Maryland

and the District of Columbia.

Kristin West, Council on Government Relations

Kris West is the Director for Research Compliance and Ethics at the Council on Governmental Relations (COGR). COGR is an association of research-intensive universities, colleges, independent research institutions, and healthcare institutions that supports its members in the areas of research administration, compliance, financial oversight, and intellectual property. As a member of COGR's staff, she provides information, regulatory analysis, policy perspective and advice to COGR's members. Prior to joining COGR, Ms. West worked for Emory University, first as Senior Associate General Counsel and later as Chief Compliance Officer. At Emory she provided compliance guidance and oversight for research and non-research areas. She also served as Emory University's Privacy Officer and Research Integrity Officer. Ms. West is an active member of the Georgia Bar. She attended the University of Maryland and Mercer University School of Law and also holds a M.S. degree in drug regulatory affairs from the University of Florida.

SESSION FIVE: Community Buy-in and Managing Cyber Risks

Thomas Fingar, Stanford University

PhD, is the Shorenstein Asia-Pacific Research (APARC) Distinguished Fellow in the Freeman Spogli Institute for International Studies (FSI), Stanford University. From 2005 through 2008, he served as deputy director of national intelligence for analysis and, concurrently, as chairman of the National Intelligence Council. Dr. Fingar served previously as assistant secretary of the U.S. State Department's Bureau of Intelligence and Research (2000-2001 and 2004-2005), principal deputy assistant secretary (2001-2003), deputy assistant secretary for analysis (1994-2000), director of the Office of Analysis for East Asia and the Pacific (1989-1994), and chief of the China Division (1986-1989). Between 1975 and 1986 he held a number of positions at Stanford University, including senior research associate at the Center for International Security and Arms Control (CISAC). Dr. Fingar is a graduate of Cornell University (A.B. in Government and History, 1968), and Stanford University (MA, 1969 and PhD, 1977 both in political science).

Kevin Gamache, Texas A&M University System

Dr. Kevin Gamache is Chief Research Security Officer for The Texas A&M University System responsible for ensuring the 11 universities and 7 state agencies within the A&M System are compliant with U.S. Government requirements for protecting sensitive federal information. He also serves as the Facility Security Officer for The Texas A&M University System and manages the System's security relationships with the Department of Defense and the Department of Energy. Dr. Gamache has earned the Industrial Security Professional® designation.Prior to his current position, Dr. Gamache was Executive Programs Training Manager for Texas Engineering Extension Service's National Emergency Response and Rescue Training Center (or NERRTC). NERRTC, a member of the National Domestic Preparedness Consortium (NDPC), was established to train local and state officials and emergency responders to prepare for and respond to acts of terrorism including those involving the use of weapons of mass destruction (WMD) as well as natural disasters and catastrophic incidents. Dr. Gamache holds a Doctorate of Philosophy (PhD) in Water Management and Hydrological Science from Texas A&M University; a Master of Science (MS) in National Resource Strategy from the Industrial College of the Armed Forces, Washington, DC; a Master of Science (MS) in Management, with a concentration in Management Information Systems from Lesley University, Cambridge Massachusetts; and a Bachelor of Science (BS) in Biology from Angelo State University, San Angelo, Texas. He also completed a Graduate Certificate in Information Strategy from the National Defense University in Washington, DC, and a Graduate Certificate in Homeland Security from the Bush School of Government and Public Service at Texas A&M University in College Station, Texas.

Keith McIntosh, University of Richmond

Keith W. McIntosh is the vice president for Information Services and chief information officer (CIO) at the University of Richmond where he has served since August 2016. Prior to joining the University of Richmond, Keith was the CIO at Ithaca College, CIO at Pima County Community College District, and held various progressive IT leadership positions during his distinguished twenty-four years of service in the United States Air Force including a combat tour in Northern Iraq. He is an award-winning CIO who has served on two higher education association boards. Keith is also a recognized and sought-after thought leader having appeared on several podcasts, participated on panels, and delivered keynotes

Keith has served on the Board of Directors for the National Association of College and University Business Officers (NACUBO) and the EDUCAUSE Board of Directors. He graduated summa cum laude from Trident University International with an MBA in information technology management and a BS in management information systems from Bellevue University. He is currently enrolled in the Executive Doctorate in Higher Education Management (Ed.D.) through the Graduate School of Education at the University of Pennsylvania.

Richard K. Lester, Massachusetts Institute of Technology

Richard Lester is the Japan Steel Industry Professor and Associate Provost at the Massachusetts Institute of Technology, where he oversees the international activities of the Institute. From 2009 to 2015 he served as head of MIT's Department of Nuclear Science and Engineering. He is the founding director and faculty chair of the MIT Industrial Performance Center. Professor Lester's research focuses on innovation strategy and management, applied most recently to the problem of deep decarbonization of the energy sector. He is also widely known for his research on nuclear technology innovation, management and control. Dr. Lester holds an undergraduate degree in chemical engineering from Imperial College and a Ph.D. in nuclear engineering from MIT. He is the author or co-author of eight books, including Unlocking Energy Innovation: How America Can Build a Low-Cost, Low-Carbon Energy System, and The Productive Edge: A New Strategy for Economic Growth. From 2015 to 2019 he served as chair of the National Academies' Board on Science, Technology, and Economic Policy.

SESSION SIX: Fostering Cooperation Among the Scientific Research, National Security, and Law Enforcement Communities

Mary Sue Coleman, University of Michigan

Mary Sue Coleman, Ph.D., served as the President of the University of Michigan from 2002 to 2014. She was the first woman in U-M history to hold this leadership position. During her tenure, she was named one of Time magazine's "10 best college presidents." Coleman, a biochemist,

launched numerous important initiatives that have helped to shape the University of Michigan, particularly the scientific research enterprise. At U-M, Mary Sue brought the Life Sciences Institute to fruition, including the hiring of its first director and 25 faculty and launched a successful campaign to hire 100 junior faculty who specifically engage in scholarship that crosses academic boundaries. She was a founding president of the University Research Corridor, an economic development collaboration with Michigan State and Wayne State universities. Mary Sue helped establish Ann Arbor SPARK, the regional economic development agency.

Allison Schwier, U.S. Department of State

Allison Schwier is currently serving as the Acting Science and Technology Adviser to the Secretary of State. In this role, she helps to connect Department foreign policy priorities to research, development, and discoveries emerging from academia and the private sector. From 2019-2021, Allison served as a Senior Policy Adviser in the STAS office, focusing on issues including 5G, semiconductors, research integrity, Smart Cities, surveillance technologies, and science and technology programs and policies in the People's Republic of China. From 2015-2019, Allison served as a Foreign Affairs Officer in the Office of Chinese and Mongolian Affairs, Bureau of East Asian and Pacific Affairs, covering the Democratic People's Republic of North Korea and the energy, environment, science & technology, and health portfolios. Prior to the State Department, Allison worked in the office of Senator Christopher Coons (D-DE) in the United States Senate, where she served as an energy/environment policy advisor. She co-wrote and introduced two pieces of legislation, to help combat wildlife trafficking and encourage the federal government to utilize citizen science and crowdsourcing, which were signed into law by then-President Obama. She also developed policies on issues such as climate change, sustainable chemistry, nuclear energy, and genetically modified organisms. Allison received her Ph.D. and M.S. in Chemical Engineering from Columbia University in the City of New York, and her B.S. in Chemical Engineering and B.A. in Music from the Pennsylvania State University. She also worked in Clermont-Ferrand, France for the Centre National de la Recherche Scientifique,

studying ocean acidification effects in the Mediterranean region.

Bruce Held, Central Intelligence Agency (retired)

Bruce Held served for three decades as a clandestine operations officer of the Central Intelligence Agency. Following his retirement from the CIA, Mr. Held served as Chief of Counterintelligence at Sandia National Laboratories where he earned the trust and support of the Sandia scientific community to implement a cost-effective program to aggressively counter the activities of foreign intelligence services targeting the laboratory. Impressed by this successful strategy, Energy Secretary Steven Chu asked Mr. Held to return to federal service as Director of DOE's Office of Intelligence and Counterintelligence to lead all intelligence and counterintelligence activities at DOE and the DOE-owned national laboratories. Secretary Chu was particularly appreciative of Mr. Held's success in expanding DOE's strategic influence on national cyber defense policy. Director of National Intelligence James Clapper awarded Mr. Held the National Intelligence Superior Service Medal for "transforming the Office of Intelligence and Counterintelligence to meet threats to the national security of the United States." In June 2013, Energy Secretary Ernest Moniz asked Mr. Held to return to federal service again and assume the responsibilities of DOE Associate Deputy Secretary as well as Acting Undersecretary for Nuclear Security with responsibility for leading the National Nuclear Security Administration, a $12 Billion dollar enterprise with 35,000 government and laboratory employees. Secretary Moniz praised Mr. Held's leadership of the NNSA as "transformational". He is currently retired.