NATIONAL ACADEMIES Sciences Engineering Medicine

Enhancing U.S. Science and Innovation with Novel Cross-Sector S&T Partnerships

Government-University-Industry Research Roundtable

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Speaker Biographies

Kim Budil is the 13th director in the history of Lawrence Livermore National Laboratory. She also serves as president of Lawrence Livermore National Security (LLNS), LLC. Budil leads a workforce of approximately 7,400 employees and manages an annual operating budget of approximately $2.7 billion.

As director, Budil sets the strategic vision for the Laboratory and exercises broad delegated powers to ensure successful execution of programs and operations to advance science and technology for the nation and to maintain an outstanding and diverse workforce. The director leads the development and implementation of the Laboratory's scientific vision, goals and objectives, and serves as the Laboratory's highest-level liaison with DOE, NNSA, the LLNS Board of Governors, the University of California and other government, public and private organizations.

She shares the responsibility, along with the directors of Los Alamos and Sandia national laboratories, of providing the president, through the secretaries of Energy and Defense, an annual institutional assessment of the state of the nuclear weapons stockpile in terms of safety, security and effectiveness, and whether confidence in the stockpile can be maintained without a nuclear test.

Budil came to the Lab in 1987 as a graduate student in Laser Programs and became a postdoc in the weapons program in 1994. Over her career she has held roles of increasing management responsibility across LLNL programs, including Weapons and Complex Integration, in which she served as principal associate director, as well as Global Security, the National Ignition Facility and Physical and Life Sciences. Budil served twice as a detailee in Washington, D.C., first at the NNSA in the Office of Defense Science and then as a senior adviser to the undersecretary for Science in the Department of Energy. She was the vice president for national laboratories in the UC Office of the President, in which she was responsible for the governance and oversight of Lawrence Livermore, Lawrence Berkeley and Los Alamos national laboratories, as well as development of strategic partnerships between the 10 UC campuses and the laboratories. She also was the executive committee governor on the LANS and LLNS Boards of Governors, and she is a Hertz Foundation Fellow and board member.

Budil received her PhD in engineering/applied science from the University of California, Davis in 1994 and obtained her bachelor's degree in physics from the University of Illinois at Chicago in 1987. She has published extensively in scientific and programmatic contexts and participated in numerous professional and community outreach activities.

Graciela (Gracie) Narcho is the U.S. National Science Foundation's deputy assistant director for Technology, Innovation and Partnerships, helping to lead the newly established TIP Directorate. Before her current role, Narcho was a senior advisor in the Office of the Director, helping to develop plans for TIP.

Narcho has been with NSF for nearly three decades, serving in a broad range of roles spanning grants and agreements oversight, program management and senior leadership. In all her NSF positions, she has been a change agent for human capital reforms, business practice innovations, and NSF policy development.

Narcho's hallmark is her ability to successfully work within the federal bureaucracy to develop innovative approaches to best meet the mission of the agency. For example, together with colleagues across NSF, Narcho has helped develop and launch several NSF initiatives, including the Global Environment for Networking Innovation, or GENI, Computing Community Consortium, or CCC, Non-Academic Research Internships for Graduate Students, or INTERN, and Computer and Information Science and Engineering Graduate Fellowships, or CSGrad4US. In recent years, Narcho co-led the NSF partnerships team, streamlining processes and procedures for NSF partnerships with industry, nonprofits, other federal agencies, and international funding organizations.

Narcho's federal career path has enabled her to impact the nation in a variety of capacities. As a contract specialist at the U.S. Department of Energy, Narcho oversaw the $120 million management and operating contract for the Office of Naval Petroleum Oil and Shale Reserves in Colorado, Utah and Wyoming. As an NSF grants officer, Narcho oversaw the cooperative agreement for the continuing operations of the National Center for Atmospheric Research, a $430 million federally funded research and development center; developed and awarded the U.S. Civilian Research and Development Foundation for the newly Independent States of the Former Soviet Union, the first NSF congressionally mandated, endowed, non-governmental, nonprofit foundation; and negotiated the first jointly-developed and funded government-industry Engineering Research Center. On a detail assignment to the U.S. Department of Health and Human Services (HHS), Narcho spearheaded the development of the first agency-wide "Grant Forecast" to provide potential proposers an early-stage preview process for all HHS grant solicitations.

As deputy division director and acting division director for NSF's Division of Industrial Innovation and Partnerships, Narcho led policy development and implementation of programs that accelerated federally funded fundamental research into market opportunities and fostered public-private partnerships to advance technological innovation. Under Narcho's leadership, NSF initiated a new pre-submission pitch process, by which potential Phase I projects in the SBIR/STTR programs could be vetted for programmatic fit and suitability prior to full proposal submission, thereby providing more immediate feedback to early-stage startups and reducing the burden on potential proposers, NSF staff and reviewers.

Narcho has also served in leadership roles within the NSF Directorate for Computer and Information Science and Engineering. She was instrumental in developing the industry-government partnerships for the National Artificial Intelligence Research Institutes program. She also led the largest transformation of the workforce structure and responsibilities in CISE history, resulting in a more flexible workforce that could be redeployed as necessary as business processes and systems changed over time.

Narcho received her bachelor's degree in economics from Tufts University and was co-valedictorian of her master's in public administration program at George Washington University, with a concentration in procurement and contracting.

Jeff Welser is Vice President, Exploratory Science and University Partnerships for IBM. He directs IBM Research Labs based in Almaden, California and Tokyo, Japan, as well as the MIT-IBM Watson AI Lab in Cambridge. He oversees exploratory and applied research to advance data technology and analytics for Hybrid Cloud and AI systems and software, with a strong focus on advanced computing technologies for AI, neuromorphic devices and quantum computing.

After joining IBM Research in 1995, Welser worked on a broad range of technologies, including novel silicon devices, high-performance CMOS and SOI device design, and next generation system components. He has led teams in both development and research, as well as running industrial, academic and government consortiums, including the SRC Nanoelectronics Research Initiative.

Dr. Welser received his PhD in Electrical Engineering from Stanford University. He holds 21 U.S. Patents and has published over 75 technical papers and presentations. He is an IEEE Fellow, a member of the IBM Academy of Technology and the American Physical Society, and Chairman of the Bay Area Science and Innovation Consortium. He serves on several university and industry technical boards, and has participated in numerous Federal Agency, National Academies and Congressional panels on advanced semiconductor and computing technology.

John Beieler is the Director, Science and Technology within the Office of the Director of National Intelligence, a role he was selected for in June 2019. In this position, Beieler leads community efforts in science and technology as well as identifying opportunities for future activities to provide and maintain intelligence strategic advantage.

Prior to this assignment, Beieler was a program manager at the Intelligence Advanced Research Projects Activity (IARPA) focusing on human language technology, machine/deep learning, and vulnerabilities in artificial intelligence. While at IARPA, Beieler led the successful creation of two programs, BETTER and SAILS, and was crucial in the establishment of the field of AI Assurance and Security within the Intelligence Community. Before joining IAPRA, Beieler was a research scientist at the Johns Hopkins Human Language Technology Center of Excellence (HLTCOE). At the HLTCOE his work focused on information extraction and semantics in support of DoD research efforts. Prior to the HLTCOE, he was a data scientist at Caerus Associates.

Dr. Beieler received his doctorate and master's degree in political science from Pennsylvania State University, and a bachelor's degree in political science from Louisiana State University.

Susan Martinis is Vice Chancellor for Research and Innovation at the University of Illinois at Urbana-Champaign, where she provides leadership for the campus-wide interdisciplinary research institutes, promotes new research initiatives, and oversees the administrative and business processes that ensure the safe, ethical, and productive conduct of research at Illinois.

Martinis, the Stephen G. Sligar Professor of Molecular and Cellular Biology, studies the mechanisms, evolution, and biomedical applications of protein synthesis and RNA-protein interactions. She is a successful researcher, engaged in entrepreneurial and corporate partnerships, a committed educator, and an experienced administrator.

Professor Martinis' research focuses on mechanisms, evolution, and biomedical applications of protein synthesis and RNA-protein interactions. Her investigations center on the family of aminoacyl-tRNA synthetases, in particular leucyl-tRNA synthetase, where she has made significant contributions for 30 years to understand quality control mechanisms, tRNA recognition, non-canonical roles in mitochondrial group I intron splicing, as well as novel activities of human enzymes. Her research program has been federally supported by the National Institutes of Health and National Science Foundation.

Martinis contributed significantly to the founding of the Carle-Illinois College of Medicine, which offers a paradigm-shifting approach to teaching medicine that is engineering-based. She served on the initial curriculum committee, as well as the Search Committee that hired the College's first Dean. She was the Interim Director of Biomedical Sciences and Engineering on the Dean's inaugural leadership team.

Dr. Martinis was elected to the Executive Committee of the Association for Public and Land-grant Universities Council on Research and has served as President of the Association of Medical and Graduate Departments of Biochemistry across North and Central America. She has served as an inaugural member of the National Institutes of Health Molecular Genetics A study section, as well as participated in Review Panels for the National Science Foundation, and was an Editorial Board Member of the *Journal of Biological Chemistry* for five years.

John Baldoni serves as the CEO of the non-profit ATOM Research Alliance (ARA), an organization utilizing artificial intelligence and machine learning approaches to expedite drug discovery for public benefit. He conceptualized the Accelerating Therapeutics for Opportunities in Medicine (ATOM) consortium – an open membership, public/private partnership, which evolved into ARA.

During his 42 years of experience in the pharmaceutical industry, Baldoni spent 29 years at Glaxo Smith Klein R&D—11 years on its Executive Leadership Team as Senior Vice President of Platform Technology and Science, which comprised about 40% of R&D headcount. This organization supported development of small molecules, biopharmaceuticals and cell and gene therapy modalities from discovery through commercialization. He stepped away from that leadership role in 2017 and started the first AI-driven drug discovery unit at GSK. After retiring from GSK in 2019, he spent a year as the Chief Technology Officer of a stealth AI-enabled drug discovery startup. In addition to his role at ARA, Baldoni is an independent consultant for clients include emerging, cutting-edge drug and diagnostic healthcare companies and established companies seeking new strategic direction.

Baldoni has participated in the research and development of scores of commercial products. He is a proponent of seeking, integrating and implementing innovative approaches to drug discovery and development. He was the first Chair of the Executive Committee of the Alliance for Artificial Intelligence in Healthcare, an organization formed to foster improved healthcare by responsible investment, invention and innovation in artificial intelligence. He received his PhD from Penn State University in biological chemistry in 1980.

Phil McAlister joined NASA in 2005, and is currently the director of the Commercial Spaceflight Division at NASA Headquarters, where he advises NASA about issues pertaining to the design, development, and demonstration and services of commercial spaceflight vehicles, systems, and capabilities. McAlister oversees multiple programs at NASA: the Commercial Crew Program, including the Suborbital Crew project; the Commercial Low-Earth Orbit Development Program, which includes private astronaut missions to the International Space Station and the development of new commercial space destinations; and the Center for the Advancement of Science in Space, the nonprofit organization NASA has contracted to manage the ISS National Laboratory.

Prior to this assignment, McAlister oversaw the successful Commercial Cargo Program (i.e., Commercial Orbital Transportation Services) which facilitated the development of the SpaceX Dragon and Northrop Grumman (previously Orbital Sciences) Cygnus cargo transportation systems. He also served as the executive director for the "Review of U.S. Human Spaceflight Plans Committee" (also known as the Augustine Committee). In 2010, he earned NASA's Exceptional Service Medal.

Prior to NASA, McAlister was a director at Futron Corporation where he managed a division that performed aerospace business analysis and technology assessments. Before joining Futron, he served as a senior manager during a 10-year career at TRW Corporation. He earned an MBA from Averett University, an MS in Systems Engineering from George Mason University, and a BS in Physical Sciences from the University of Maryland.

Deborah Stokes is Leader & Senior Consultant for External Research at Dell Technologies Office of the Chief Technology Officer, responsible for the management and collaboration with universities and research institutions to drive innovation, and advanced technology exploration, delivering insights and metrics on emerging/disruptive technologies. She also leads the Technology Exploration (TEx) internal conference to share innovation and thought leadership across the Dell technical community.

Stokes has served in various ICT leadership positions for 25+years in both academia and industry, working with large global technology firms such as Nortel, FutureWei, EMC, and Dell. She has additional experience in the education vertical. Her career expertise spans R&D, external research, university interaction, business development, operations, and marketing/communications; all providing opportunities to utilize her skills in program management, technology management, innovation, cross organization collaboration, knowledge management and leadership.

Stokes serves on various university advisory boards, including the North Carolina State University College of Computing Strategic Advisory Board, the NYU Wireless Industry Advisory Board, the MIT Media Lab Liaison Program Committee, and is a Strategy Council Member for the International Society of Service Innovation Professionals. Deborah is a recognized speaker on best practices in external research and innovation and has numerous publications in the technology management field.

She has a BS in Business Administration and completed her Executive MBA at the University of Texas at Dallas, with a focus on "Managing for Change."

Kendra Ketchum is the Vice President for Information Management and Technology at the University of Texas at San Antonio. She oversees the university's overarching technology environment, including critical IT enablement for research and teaching activities of faculty and students, all information applications and infrastructure related to administrative information technology, information security and technical services for faculty, staff and students. She cultivates leadership and teamwork to implement visionary IT strategies that will further UTSA's advancement as a nationally recognized research institution.

Prior to joining UTSA, Ketchum served as Chief Technology Officer of IT Shared Services at the University of North Texas. She brings more than 25 years of technology experience in higher education and government organizations, including leadership roles at Texas Wesleyan University, the University of Northwestern Ohio, and Bowling Green State University.

Ketchum serves as the Secretary for the LEARN Board, is on the Leadership Board for CIOs in Higher Ed (LBCIO); volunteers for the Young Women's Leadership Academy, is involved with EDUCAUSE Hawkins Leadership; and serves on the Microsoft Higher Education Customer Advisory Board and the Dell Higher Education Customer Advisory Board.

Laurie Locascio is the 17th director of the National Institute of Standards and Technology, and the fourth Under Secretary of Commerce for Standards and Technology. In this role, she provides high-level oversight and direction of NIST.

Dr. Locascio most recently served as vice president for research at the University of Maryland College Park and University of Maryland Baltimore, where she focused on the development of large interdisciplinary research programs, technology commercialization, innovation and economic development efforts, and strategic partnerships with industry, federal, academic and nonprofit collaborators. She also served as a professor in the Fischell Department of Bioengineering at the A. James Clark School of Engineering with a secondary appointment in the Department of Pharmacology in the School of Medicine.

Before joining the University of Maryland, Locascio worked at NIST for 31 years, rising from a research biomedical engineer to eventually leading the agency's Material Measurement Laboratory (MML). She also served as the acting associate director for laboratory programs, providing direction and operational guidance for NIST's lab research programs. She implemented strategic partnerships with universities, industry and other government labs, including a partnership with the University of Maryland's Institute for Bioscience and Biotechnology Research at the Universities at Shady Grove.

Locascio's most recent honors and awards include the 2021 induction as a fellow of the National Academy of Inventors, the 2017 American Chemical Society Earle B. Barnes Award for Leadership in Chemical Research Management, and the 2017 Washington Academy of Sciences Special Award in Scientific Leadership. She has published 115 scientific papers and has received 12 patents in the fields of bioengineering and analytical chemistry. Her honors and awards also include the Department of Commerce Silver and Bronze Medal Awards, the American Chemical Society Division of Analytical Chemistry Arthur F. Findeis Award, the NIST Safety Award and the NIST Applied Research Award. She is also a fellow of the American Chemical Society and the American Institute for Medical and Biological Engineering.

Dr. Locascio has a BS in chemistry from James Madison University, an MS in bioengineering from the University of Utah, and a PhD in toxicology from the University of Maryland Baltimore.

Grace Wang joined The Ohio State University in December 2020 as executive vice president for Research, Innovation and Knowledge where she plays a lead role in expanding the university's cutting-edge research, creative expression and scholarship, stimulating entrepreneurship, and building strategic partnerships. Dr. Wang also serves as a professor in the Department of Materials Science and Engineering at Ohio State.

Prior to Ohio State, Wang held dual roles as senior vice chancellor for Research and Economic Development at the State University of New York (SUNY) System and interim president of SUNY Polytechnic Institute. At SUNY, Wang led its research enterprise with about $1.7 billion annual expenditure. She advanced a research and economic development growth strategy, expanding its research capacity in key strategic areas. She was instrumental in establishing a few large-scale strategic partnerships at SUNY, advancing its research and development capacity while fueling regional economic growth.

Before joining SUNY, Wang served as acting assistant director for engineering at NSF. In this role, she led the Engineering Directorate at NSF, managing a funding portfolio of over $900 million dedicated to investments in frontier engineering research, supporting engineering education, and fostering innovation and technology commercialization. She previously served as NSF's deputy assistant director for engineering, overseeing the operation of the Directorate for Engineering and helping to identify and implement research, innovation, and education priorities.

Dr. Wang began her career at IBM/Hitachi Global Storage Technologies, focusing on research and development of magnetic thin film and carbon overcoat for data storage. She holds seven U.S. patents. She received a PhD in Materials Science and Engineering from Northwestern University.

Gabriela Cruz Thompson is the Director of University Research & Collaboration in Intel Labs at Intel Corporation. In this role, she and her team identify and fund critical large and medium scale research at leading universities world-wide. She also currently serves as a member of the Advisory Committee to the Computer and Information Science and Engineering (CISE) directorate at the National Science Foundation.

Previously, Thompson served as the Chief of Staff at Intel Labs and as a Technical Assistant to Intel's Chief Technology Officer. She has held a number of other roles in the company's manufacturing facilities during her 20+ year career at Intel.

Thompson earned a master's degree in Materials Science and Engineering at Arizona State University and a Chemical Engineering Degree from the University of Costa Rica. Today, she calls the Portland, Oregon area home.

Eric Evans is the Director of MIT Lincoln Laboratory, a multidisciplinary Federally Funded Research and Development Center run by the Massachusetts Institute of Technology for the Department of Defense. As Director, he is responsible for the Laboratory's strategic direction and overall technical and administrative operations.

Evans is currently the chair of the Defense Science Board (DSB). As a member of the DSB since 2009, he has served on several studies, including as co-leader of Task Forces on Improvised Explosive Devices and Cyber Security, and Reliability in a Digital Cloud. He has been an advisor to the U.S. Strategic Command Senior Advisory Group and a member of the Massport Security Advisory Council. From 2012 to 2018, he was the Chair of the Board of Directors for the National GEM Consortium, an organization that provides fellowships to underrepresented minorities pursuing graduate degrees in STEM fields. He previously served as a member of the Los Alamos and Lawrence Livermore National Laboratory Nuclear Mission Committee.

Dr. Evans is a Fellow of the IEEE, a Fellow of the AIAA, and a member of the National Academy of Engineering. He is the author of more than 50 journal and conference publications. In 1996, he and his coauthors received the M. Barry Carlton Award from the IEEE Aerospace and Electronics Systems Society for a paper on advanced radar signal processing. He holds BS, MS, and PhD degrees in electrical engineering from The Ohio State University.