NATIONAL ACADEMIES Sciences Engineering Medicine

Strategic Innovation and Commercialization: Supporting IP and Tech Transfer to Advance U.S. Research Competitiveness

Government-University-Industry Research Roundtable

February 7-8, 2023

Speaker Biographies

Vaishali Udupa is the Commissioner for Patents of the United States Patent and Trademark Office (USPTO). As Commissioner for Patents, Ms. Udupa manages and leads the Patents organization as its chief operating officer. She oversees the agency's 10,000 Patents employees, including more than 9,000 patent examiners responsible for fostering the country's innovation system by providing patent protections to inventors as stated in Article I, Section 8 of the U.S. Constitution.

Prior to joining the USPTO, Ms. Udupa was already a nationally recognized leader in intellectual property (IP), with over twenty years of experience in strategic IP advisement and complex litigation. She has a wealth of experience in patent prosecution and litigation, global IP policy, and diversity, equity, inclusion, and accessibility. In the private sector, Ms. Udupa secured multiple IP trial wins and managed numerous IP cases to favorable resolutions in the United States and abroad. She assisted in the development of patent and trademark portfolios and counseled internal clients regarding licensing deals, asset acquisitions, and agreements involving IP rights. Her technological experience includes, among others, electronic devices, networking and telecommunication systems, computer software, electronic commerce, consumer products, sporting goods, and medical devices.

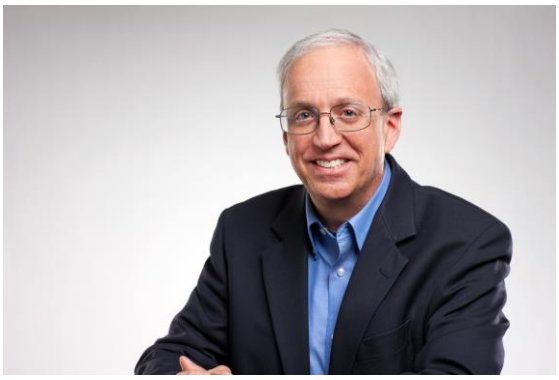
Throughout her career, Ms. Udupa has achieved a proven track record of addressing diversity issues in the science, technology, and legal professions. She has sought to promote diversity and inclusion through pro-bono work and bar association involvement, including by serving as Honor Roll Committee Co-Chair of ChIPs, a non-profit organization that advances and connects women in technology, law, and policy; volunteering with the Girl Scouts Nation's Capital to provide young girls with their inventor patch; and teaching basic IP topics to Washington, D.C., high schoolers through the Street Law Program. Her efforts have received accolades, including the National Bar Association's 2020 Diversity in Tech and IP Law award. She also maintains a keen interest in increasing entrepreneurship and the number of patents applied for and obtained by all inventors, including women, minorities, veterans, and those from rural and economically disadvantaged areas.

Prior to joining the USPTO, Ms. Udupa was the Vice President, Associate General Counsel for Litigation at Hewlett Packard Enterprise (HPE). Prior to HPE, she was an IP litigation manager at HP and an associate at Jones Day and Pennie & Edmonds. Ms. Udupa earned her Juris Doctor from American University's Washington College of Law and her B.S. in Civil Engineering from the University of Virginia.

Candice Wright is a Director in the U.S. Government Accountability Office's Science, Technology Assessment, and Analytics team. She oversees GAO's work on federally funded research, intellectual property protection and management, and federal efforts to help commercialize innovative technologies and enhance U.S. economic competitiveness.

Candice joined GAO in July 2004. She has led engagements examining federal contracting, risks to the defense supplier base, foreign military sales, and homeland security. In 2011, she served on a congressional detail to the Senate Permanent Subcommittee on Investigations. Candice also served as the head of GAO's office in Kabul, Afghanistan.

Candice earned a master's degree in public policy from Carnegie Mellon University, and a bachelor's degree in management from Bentley College.

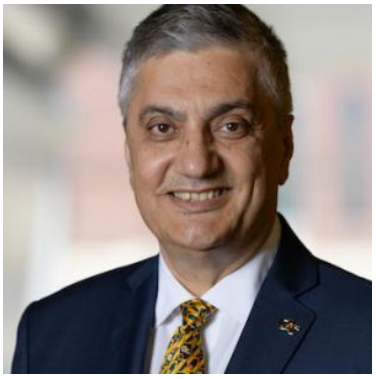


Bill Dally joined NVIDIA in January 2009 as chief scientist, after spending 12 years at Stanford University, where he was chairman of the computer science department. Dally and his Stanford team developed the system architecture, network architecture, signaling, routing and synchronization technology that is found in most large parallel computers today.

Dally was previously at the Massachusetts Institute of Technology from 1986 to 1997, where he and his team built the J-Machine and the M-Machine, experimental parallel computer systems that pioneered the separation of mechanism from programming models and demonstrated very low overhead synchronization and communication mechanisms. From 1983 to 1986, he was at California Institute of Technology, where he designed the MOSSIM Simulation Engine and the Torus Routing chip, which pioneered "wormhole" routing and virtual-channel flow control.

Dally is a member of the National Academy of Engineering, a Fellow of the American Academy of Arts & Sciences, a Fellow of the IEEE and the ACM, and has received the ACM Eckert-Mauchly Award, the IEEE Seymour Cray Award, and the ACM Maurice Wilkes award. He has published over 250 papers, holds over 120 issued patents, and is an author of four textbooks.

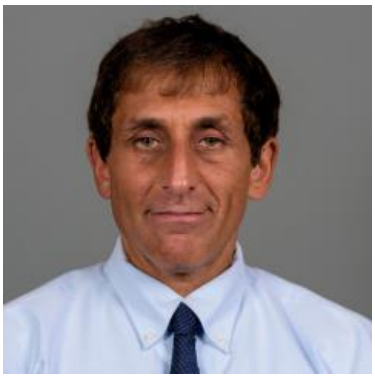
Dally received a bachelor's degree in Electrical Engineering from Virginia Tech, a master's in Electrical Engineering from Stanford University and a Ph.D. in Computer Science from California Institute of Technology. He was a cofounder of Velio Communications and Stream Processors.



Chaouki Abdallah is the Executive Vice President for Research 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. This position provides overall leadership for the more than $1 billion annual research enterprise that includes the Georgia Tech Research Institute, 10 interdisciplinary research institutes, 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, the Council of the Government-University-Industry Research Roundtable, and the advisory committee for the Center on Measuring University Performance.

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 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 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. He has published eight books (three as co-editor and five as co-author) and more than 300 peer-reviewed papers and provided expert testimony to the U.S. House of Representatives Committee on Science, Space, and Technology.



Don Siegel is Foundation Professor of Public Policy and Management in the School of Public Affairs and Co-Executive Director of the Global Center for Technology Transfer at Arizona State University. From 2017-2022, he served as Director of SPA, which is ranked #12 in the country, according to U.S. News and World Report, and #2 in research in the U.S., according to the Shanghai Academic Ranking of World Universities. From 2008-2016, Don was Dean of the School of Business at the University at Albany, SUNY.

He received his bachelor's degree in economics and his master's and doctoral degrees in business economics from Columbia University. He was a Sloan Foundation post-doctoral fellow at the National Bureau of Economic Research and then taught at SUNY-Stony Brook, the University of Nottingham, RPI, where was he was Chair of the Economics Department, and the University of California-Riverside, where he served as Associate Dean for Graduate Studies.

Professor Siegel is an editor of the *Journal of Technology Transfer*, a former editor of the *Journal of Management Studies* and *Academy of Management Perspectives*, an associate editor of the *Journal of Productivity Analysis*, and a former associate editor of the *Journal of Business Venturing* and *Academy of Management Learning and Education*. He has also co-edited 51 special issues of leading journals in management and economics. He is an elected Fellow of the American Association for the Advancement of Science and the Academy of Management (AOM) and in 2020, was elected Dean of the AOM Fellows. He has published 138 articles in refereed journals, 21 book chapters and 14 books on issues relating to university technology transfer and entrepreneurship, the effects

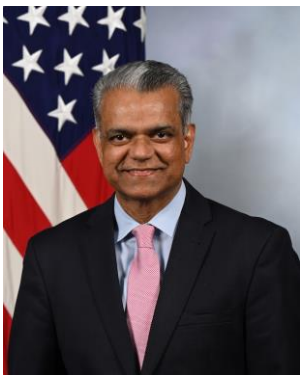
of corporate governance on performance, productivity analysis, the economic effects of gambling, and corporate and environmental social responsibility in several leading journals. He has consulted for and advised a number of institutions, and recently co-chaired a NASEM Committee on "Advancing Commercialization from the Federal Laboratories."

Cary Coglianese specializes in the study of administrative law and regulatory processes, with an emphasis on the empirical evaluation of alternative processes and strategies and the role of public participation, technology, and business-government relations in policymaking.

The author of more than 200 articles, book chapters, and essays on administrative law and regulatory policy, Coglianese's recent book projects have included: *Achieving Regulatory Excellence*; *Does Regulation Kill Jobs?*; *Regulatory Breakdown: The Crisis of Confidence in U.S. Regulation*; *Import Safety: Regulatory Governance in the Global Economy;* and *Regulation and Regulatory Processes*. He has also recently written on climate change policy, public participation and transparency in federal rulemaking, the use of artificial intelligence by government agencies, voluntary environmental programs, and role of waivers and exemptions in regulatory law.

The founding director of the Penn Program on Regulation, Coglianese previously served as Penn Law's Deputy Dean for Academic Affairs. Prior to joining the Penn faculty, he spent a dozen years on the faculty at Harvard University's John F. Kennedy School of Government where he founded and chaired the school's Regulatory Policy Program and was an affiliated scholar at the Harvard Law School. He also has served as a visiting law professor at Stanford University and Vanderbilt University.

Currently the chair of a National Academy of Sciences committee studying implications for law and regulation of emerging trends in the maritime sector, Coglianese has served as a member of other Academy committees on performance-based regulation and on ways to improve federal inspections of offshore oil and gas development. He has also served on an Aspen Institute panel on energy governance. He has provided research and advice on various regulatory issues to the Alberta Energy Regulator (Canada), Environment Canada, the U.S. Department of Transportation, the U.S. Environmental Protection Agency, and the Organization of Economic Cooperation and Development (OECD).



Dev Shenoy joined the Office of the Under Secretary of Defense for Research and Engineering, OUSD(R&E), as the Principal Director for Microelectronics in July 2021. In this role, Dr. Shenoy is responsible for leading the Department of Defense's research and engineering efforts in Microelectronics.

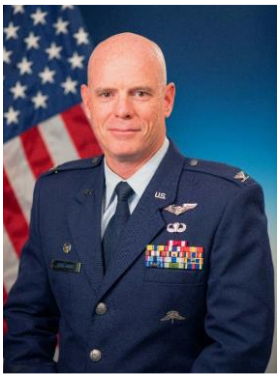
Prior to joining OUSD(R&E), Dr. Shenoy served as the Director of Microelectronics Innovation and as Director of Advanced Technologies at the University of Southern California's Information Sciences Institute.

Prior to joining USC/ISI, Dr. Shenoy served as Chief Engineer in the Advanced Manufacturing Office at the Department of Energy (DOE) HQ. In that role, he co-authored DOE's 2015 Quadrennial Technology Review that served as a blueprint for DOE's energy technology investments. Among other initiatives, Dr. Shenoy proposed and led a "Big Idea" for U.S. national security and economic competitiveness within the Office of Energy Efficiency and Renewable Energy on "Beyond Moore Computing" with participation from eight DOE National Labs.

Prior to joining DOE, Dr. Shenoy served as a Senior Advisor at the Manufacturing and Industrial Base Policy Office (MIBP) within the Office of the Secretary of Defense (OSD) as a detailee from the Army Night Vision and Sensors Directorate at Fort Belvoir. In that role, he co-led a Telecom initiative with the White House Office of Science and Technology Policy to explore U.S. opportunities in optical networks. While at OSD/MIBP, Dr. Shenoy proposed and helped develop a public-private partnership in photonics that led to the creation of the AIM Photonics Institute.

Prior to serving at OSD/MIBP, Dev was a Program Manager at DARPA, where he developed and managed cutting-edge technology programs in the areas of spintronics, such as the Spin Torque Transfer Random Access Memory program, a technology that was successfully transitioned and commercialized; Dr. Shenoy also developed and led programs in Photonics and MEMS for defense and commercial applications.

Dr. Shenoy has a Ph.D. in Physics from the prestigious Indian Institute of Science in Bangalore, India, and NSF postdoctoral experience from Case Western Reserve University in Cleveland, Ohio.



Col Charles Bris-Bois currently serves as the Senior Advisor for Department of Defense (DoD) and Commercial Strategy at the Defense Advanced Research Projects Agency (DARPA). He's a Combat Rescue Officer with an extensive career in Rescue, DoD acquisitions/procurement, strategy, and technology development.

Prior to this assignment, Col Bris-Bois served as Commander of the First Expeditionary Rescue Group. The Rescue Group maintained a continuous combat rescue alert employing the HH-60G, HC-130J, and Guardian Angel Pararescue for U.S. Central Command's 24/7 combatant command requirement.

Prior to Command, Col Bris-Bois was a strategist in Air Force Futures and Concepts (Skunks), where he led the Air Force's development of concepts of employment for various types of hypersonic weapons systems. He then took over the Innovative Solutions Division where he helped implement the Air Force S&T 2030 Strategy and ensured 'Disruptive Technologies' such as quantum sciences, artificial intelligence, 5G, and advanced bio-sciences were incorporated in the Air Force's future design.

Jayne Morrow is Senior Advisor for Standards Policy at the National Institute of Standards and Technology (NIST).

Before joining NIST, Morrow was Assistant Vice President for Research and Economic Development at Montana State University, where she led the federal relations portfolio, including congressional relations, federal partnerships, and applied research program growth. She served as the Executive Director of the National Science and Technology Council within the Office of Science and Technology Policy at the White House from 2013-2015.

Christina Lomasney is a veteran entrepreneur with two decades of experience in technology innovation and commercialization. She joined Pacific Northwest National Laboratory as the director of Commercialization in 2021, focusing on industrial partnerships to expand the impact of PNNL's science and technology.

Prior to joining the national laboratory, Christina's efforts brought advanced materials and environmental remediation innovations to U.S. and global markets. She is a physicist with a deep background in materials science and electrochemistry and was named one of the World's Most Promising Women Entrepreneurs by Fortune in 2015.

In 2007, Christina founded Modumetal, Inc., a Seattle-based company that develops and commercializes a novel class of nanostructured materials that resist corrosion better than steel. While at Modumetal, Christina raised more than $100 million in equity and non-equity funding and created partnerships with several Fortune 500 companies. She served as the company's president and CEO until 2020. Her first start-up, Isotron Corp., developed technologies for use in large-scale decontamination and environmental restoration projects. The company's customers included the U.S. military, and its technologies were used to decontaminate commercial and industrial sites after the Fukushima Daiichi accident in Japan.

Today, Christina serves by gubernatorial appointment on the board for the Joint Center for Deployment and Research in Earth Abundant Materials (JCDREAM). JCDREAM was created to support collaborative academic and industry programs, securing supply chains for critical materials in the State of Washington. She also serves as a board member of the Association of Washington Business Institute, as a fellow with the Unreasonable Group, and a mentor on IP strategy with the Founders Institute. She is an Entrepreneur in Residence with Washington State University Tri-Cities and previously was a board member for the Science and Engineering Business Association and a commissioner on the Washington Economic Development Commission.

Christina earned bachelor's and master's degrees in physics from the University of Washington in Seattle.

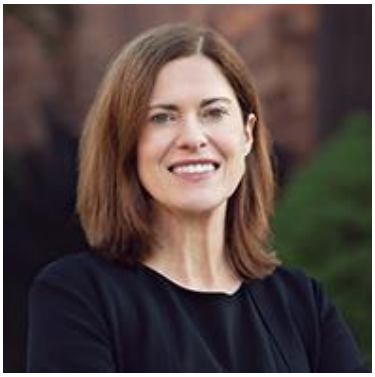
Mauricio Futran is an independent consultant to the pharmaceutical industry. Through 2022, he led Advanced Technology in the Global Tech Services group of Janssen Supply Chain at Johnson & Johnson for 10 years, focusing on manufacturing process understanding and reliability; incorporating predictive modeling, in line measurements, data analytics and other technologies into the full range of activities from R&D through scale-up, tech transfer, and life cycle management. The goal was model predictive control and Real Time Release.

Before joining J&J, Futran was professor and chair of Chemical and Biochemical Engineering at Rutgers University, after working for 28 years in various positions in pharmaceutical product and process development at Merck and Co. and Bristol-Myers Squibb, where he was Vice President of Process R&D.

Dr. Futran is a member of the National Academy of Engineering (NAE), where he has been chair of its Chemical Engineering section, and has served on its peer committee, the Board of Chemical Sciences and Technology. He is now a member of the NAE President's Racial Justice and Equity Committee and leads a working group within the NAE President's Business Advisory Committee to bring racial justice and equity solutions to industry. He is a member of the American Institute of Chemical Engineers and served on the awards committee. He has also been a

member and chair of the Princeton Chemical and Biological Engineering external board, and served as a member of the external boards for the University of Illinois at Urbana Champaign, Georgia Tech, and Rutgers.

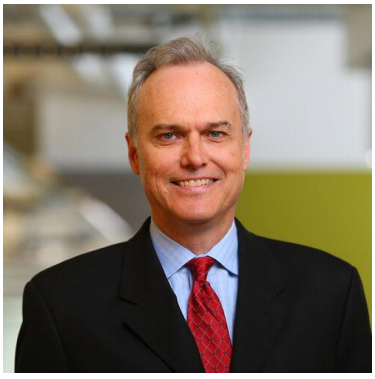
Dr. Futran has Chemical Engineering degrees from Rice University and Princeton University.



Kelly Sexton is associate vice president for research and innovation partnerships at the University of Michigan, where she works closely with the vice president for research as well as other leaders across the university to provide visionary and strategic leadership of U-M's innovation, corporate research and technology commercialization activities, including overseeing Innovation Partnerships. In this role, she supports and encourages university-wide programs for intellectual property development, innovation, and engagement with business and venture communities in the region, across the nation, and around the globe.

Prior to her arrival at U-M in 2018, Kelly was the Assistant Vice Chancellor for Technology Commercialization and New Ventures at North Carolina State University, where she served as principal investigator for an NSF I-Corps site and co-founded an alumni angel investor network to provide a new source of funding for university startups and spinouts.

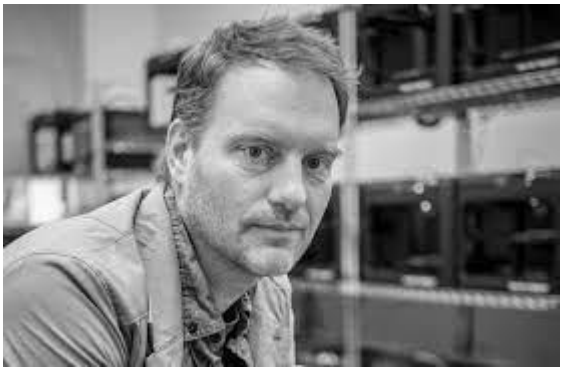
Kelly holds a B.S. in Biochemistry and Molecular Biology from the University of Georgia and a Ph.D. in Molecular Pathology from the University of California, San Diego where she was supported by a fellowship from the California Breast Cancer Research Foundation. Kelly completed her postdoctoral studies at Stanford University where she was awarded a fellowship from the Susan G. Komen Breast Cancer Foundation. Kelly serves as co-chair of the U-M Roundtable on Innovation and Entrepreneurship, on the Advisory Board for the Detroit Chapter of Venture for America, and the Executive Committee of Ann Arbor SPARK.



Charlie Lewis manages the creation and growth of new Arizona State University spin-out companies. He brings 20 years of entrepreneurial and private equity experience to Skysong Innovations. Prior to joining Skysong Innovations, Lewis served as general partner for two Arizona venture capital funds, Arris Ventures and Paradise '94. He directed the investment committee responsible for analyzing due diligence findings and appropriating more than $25 million in private capital with an emphasis on early-stage technology companies. During that time, he was involved in the acquisition of three portfolio companies, one by a public corporation (NYSE: IDR).

Prior to his venture fund experiences, Lewis was Vice President of Sales & Marketing for Tritium Technologies. There he developed the marketing plan and managed the sales process for the company's digital vibration attenuation products. He has also served as International Director for Distribution for ANVT, Inc. In that role, he formulated the North American and European distribution plans and gained key insight into international trade relations.

Lewis was a founding partner of Midas Computers after graduating from Arizona State University with a B.S. in computer science. The company designed software tools for small retail businesses and was acquired by POS Systems in 1993.



Iain Kerr is Founding Partner of the Emergent Futures Lab; co-director of the MIX Lab at Montclair State University; and co-founder of the boundary-blurring design consultancy SPURSE. His formative years led him to become a designer working at the intersection of creativity, ecology, and emergent systems—always with the goal: to make novel worlds possible. His unique approach evolves from over twenty plus years of experimenting across and beyond the zones of Architecture, Design, Ecology, Art, Creativity Studies, Ethnobotany, Food Studies, Systems Thinking, Social Entrepreneurship, Commons Studies and Philosophy.

Kerr and Jason Frasca founded Emergent Futures Lab in 2018 as a consultancy to catalyze new effective models of creativity, invention, and change—what they are, how they are realized, and how they can be taught.

Kerr regularly works as a consultant, lecturer and workshop leader on creativity, innovation, and design (MIT, Harvard University, Columbia University, Parsons, Yale, CCA, and RISDI). His most recent research is on developing new processes for innovation that are collective, enactive, materially-engaged and emergent.