

Review of the Small Business Innovation Research and Small Business Technology Transfer Programs at NASA

Committee

Maryann P. Feldman

Co-Chair

Maryann P. Feldman is the Watts Professor in the Department of Public Policy at Arizona State University. Feldman was the winner of the Global Award for Entrepreneurship Research for her contributions to the study of the geography of innovation and the role of entrepreneurial activity in the formation of regional industry clusters. Feldman's most recent work explores the emergence of regional entrepreneurial ecosystems. Feldman served as the co-chair of the congressionally mandated National Academies of Sciences, Engineering, and Medicine studies of the SBIR and STTR programs at the Department of Energy, National Institutes of Health, and National Science Foundation. Feldman received her PhD in economics and management from Carnegie Mellon University.

Scott Stern

Co-Chair

Scott Stern is the David Sarnoff Professor of Management at the MIT Sloan School of Management. Stern explores how innovation and entrepreneurship differ from more traditional economic activities, and the consequences of these differences for strategy and policy. His research in the economics of innovation and entrepreneurship focuses on entrepreneurial strategy, innovation-driven entrepreneurial ecosystems, and innovation policy and management. Recent studies include the impact of clusters on entrepreneurship, the role of institutions in shaping the accumulation of scientific and technical knowledge, and the drivers and consequences of entrepreneurial strategy.

Stern started his career at MIT, where he worked from 1995 to 2001. Before returning to MIT in 2009, he held positions as a professor at the Kellogg School of Management and as a Non-Resident Senior Fellow at the Brookings Institution. Stern was the co-founder and director (through 2021) of the Innovation Policy Working Group at the National Bureau of Economic Research. In 2005, he was awarded the Kauffman Prize Medal for Distinguished Research in Entrepreneurship. In 2018, he joined the National Academies of Sciences, Engineering, and Medicine's Board on Science, Technology, and Economic Policy (STEP). He has additionally served and contributed to a number of National Academies committees, including The Future of Supercomputing (2004), Copyright in the Digital Era (2013), and An Assessment of ARPA-E (2017). He has served as co-chair of three National Academies committees examining the SBIR and STTR programs at the Department of Energy, National Institutes of Health, and National Science Foundation, respectively.

Stern holds a BA in economics from New York University and a PhD in economics from Stanford University.

Greg W. Autry

Member

Greg Autry is the Professor of Practice in the College of Business and Associate Provost for Space Commercialization and Strategy at the University of Central Florida. Before this, Autry was the Director and Clinical Professor of Space Leadership, Policy, and Business at the Thunderbird School of Global Management at Arizona State University.

Autry's research is focused on the role of government in the emergence of new industries. He has taught technology entrepreneurship at UC Irvine, the University of Southern California, and at Imperial College London. He is the author of the textbook, *A New Entrepreneurial Dynamic*.

Autry served on the 2016 Agency Review Team and as White House Liaison at NASA and was nominated to serve as NASA's Chief Financial Officer in 2020. He served as Chair of the Safety Working Group on the Commercial Space Transportation Advisory Committee (COMSTAC) at the Federal Aviation Administration. He is Vice President for Space Development at the National Space Society and a member of the Academy of Management and the American Institute of Aeronautics and Astronautics.

Autry holds an MBA and PhD from the University of California, Irvine.

Dianne Chong

Member

Dianne Chong, PhD, NAE, FSME, FASM, FABET, was vice president in The Boeing Company's Engineering, Operations & Technology organization where she led materials and manufacturing research and development and production program integration. Chong was elected to the National Academy of Engineering and Washington State Academy of Science in 2017. She serves on the NAE Council and co-chairs EngineerGirl. She is a member of the Governing Board of the National Research Council and a member of the National Academies of Sciences, Engineering, and Medicine's Division of Behavioral and Social Sciences and Education. She serves on the National Science Foundation Directorate for Engineering Advisory Committee. Chong is past president of ABET and serves on its Inclusion, Diversity, and Equity Advisory Council. Chong is past president and Fellow of the SME. She is a fellow of ASM and in 2007-2008 was elected its first female president. She received an award for alumna achievement from the University of Illinois in 2019 and has received numerous technical and diversity awards. She was inducted into the first class of the Women in Manufacturing Hall of Fame. Chong received bachelor's degrees in biology and psychology, and master's degrees in physiology and metallurgical engineering. Chong received her doctorate in metallurgical engineering from the University of Illinois. She has an Executive Master of Manufacturing Management degree from Washington University and a green belt in Six Sigma. Chong is a member of TMS, AIAA, ASM International, SWE, Beta Gamma Sigma, and Tau Beta Pi.

Jeannette Colyvas

Member

Jeannette Anastasia Colyvas holds a PhD from Stanford University and is an Associate Professor at Northwestern University's School of Education and Social Policy, the Institute for Complex Systems (NICO), and (by courtesy) the Kellogg School of Management, the Department of Sociology, and the Institute for Policy Research. Her research interests include innovation in science policy and practice; comparing public, private, and nonprofit forms of organizing; performance metrics; and institutional change. Her publications appear in diverse journals, such as *Management Science*, *Research Policy*, *Minerva*, *Organization Science*, *Research in Organizational Behavior*, *Sociological Theory*, *Academy of Management Review*, and *American Journal of Education*. Support for her research has come from competitive grants from government, university, and foundation sources. She currently teaches courses related to leadership, innovation, and organizational change at the undergraduate, MBA, doctoral, and executive levels. She previously served on the National Academies of Sciences, Engineering, and Medicine's committee assessing the SBIR and STTR programs at the Department of Energy.

Alexandra E. Graddy-Reed

Member

Alexandra Graddy-Reed is an Associate Professor of public policy at the University of Southern California in the Price School of Public Policy. She is also the research director for the National Science Foundation I-Corps Hub West Region. Her research is focused on the financing of innovation, specifically examining the impacts of federal and philanthropic grantmaking on R&D, small business & entrepreneurship, and scientific career paths. She also studies how bias exists and is mitigated in R&D funding and innovation. Graddy-Reed has previously studied the NASA SBIR program with respect to its impact across firm size, issues around gender bias in the peer review process, and the role of geography in award selection. She received her PhD from the University of North Carolina, Chapel Hill and a bachelor's degree from Hendrix College.

Jorge Guzman

Member

Jorge Guzman is the Gantcher Associate Professor of Business at Columbia University and a Faculty Research Fellow in the Innovation Program at the National Bureau of Economic Research. He is the co-founder of the Startup Cartography Project, a project aiming to measure the quality and quantity of entrepreneurship in the United States at any level of granularity. Guzman's research focuses on the measurement of entrepreneurship and the role of entrepreneurship in the economy, including the evolution of economic clusters and their role in enabling startups, entrepreneurial motivations, and entrepreneurial strategy. He was also a leader of the National Science Foundation Regional Innovation Engines study group. Guzman was previously the entrepreneurship post-doc at the National Bureau of Economic Research. He has a PhD and an MBA from the Massachusetts Institute of Technology and a BS in computer engineering from Tec de Monterrey.

Amol Joshi

Member

Amol M. Joshi is the Bern Beatty Fellow and Associate Professor of Strategic Management at the Wake Forest University (WFU) School of Business. He holds a joint appointment as an Associate Professor of Innovation and Commercialization at the WFU School of Medicine. He is course director for innovation management in the MS in translational biotechnology program at the Wake Forest Institute for Regenerative Medicine (WFIRM). His research focuses on technology entrepreneurship and strategies for protecting and commercializing intellectual property (IP). He has investigated the impact of workforce diversity at agencies awarding SBIR and STTR grants, and the likelihood of minority and women technology entrepreneurs receiving awards. He has also analyzed the effects of SBIR and STTR grants on firms' subsequent job creation and venture capital funding activities. In 2015, Joshi was awarded a Kauffman Foundation Junior Faculty Fellowship in Entrepreneurship Research. He received his PhD in business administration from the Kenan-Flagler Business School at the University of North Carolina at Chapel Hill, his MBA and MS in engineering sciences from Dartmouth College, and his BS in electrical engineering (with highest honor) from the Georgia Institute of Technology. Joshi previously served on National Academies of Sciences, Engineering, and Medicine committees examining the SBIR and STTR programs at the Department of Energy, National Institutes of Health, and National Science Foundation.

Shawn Kantor

Member

Shawn Kantor is the L. Charles Hilton Jr. Distinguished Professor of Economics and the Director of the Hilton Center for the Study of Economic Prosperity and Individual Opportunity at Florida State University. He is also a Research Associate of the National Bureau of Economic Research. Kantor's current research explores the economic effects of public R&D on regional economic growth. Recent projects have included studies of knowledge spillovers from research universities, both historically and modern, and of the economic effects of NASA expenditures during the Space Race era. His prior work has examined property rights to land in the postbellum South, the origins of workers' compensation in the United States, and the economic effects of New Deal spending during the Great Depression. Kantor's various research projects have been extensively supported by the National Science Foundation. Kantor earned his PhD and MS in social science from the California Institute of Technology in 1991 and 1988, respectively, and his BA in economics and history from the University of Rochester in 1987.

Robert A. Lieberman

Member

Robert Lieberman, President of Lumoptix LLC, is a Member of the National Academy of Engineering (NAE). Lieberman worked for ten years at AT&T Bell Labs in the Semiconductor Development, Physics Research, and Materials Research Laboratories.

Lieberman became Vice President of R&D at Physical Optics Corporation (POC) in 1991, and in 1998 spun off his division of POC to found Intelligent Optical Systems (IOS). In addition to serving as President and CTO, Lieberman maintained an active research career as Principal Investigator for the National Science Foundation, National Institutes of Health, Department of Energy, NASA, DARPA, and other U.S. agencies until his retirement from IOS in 2015. He continues to work on scientific and engineering research and policy through his consulting firm, Lumoptix.

Lieberman holds 34 U.S. patents on biological, physical, and chemical sensors and systems, has organized and chaired more than 30 conferences on optical sensors, and has helped found several companies. Lieberman is a Life Member of IEEE, a Fellow of SPIE, and was SPIE's 2016 President. He was a founding member of the National Photonics Initiative and currently serves as a director and/or advisory board member of several for-profit and nonprofit organizations. Lieberman received his PhD in physics from the University of Michigan.

David W. Miller

Member

David Miller is the CTO for Astronomy and Fundamental Physics at NASA Jet Propulsion Lab and the Jerome C Hunsaker Professor Post Tenure of Aeronautics and Astronautics at MIT. Previous experience includes CTO of The Aerospace Corporation and CTO of NASA. Technology guidance experience includes his role as the Vice Chair and S&T Chair of the Air Force Scientific Advisory Board where he led the annual review of AFRL, the management of the Aerospace Corporation's IR&D program, technology investment prioritization and inter-agency S&T partnerships at NASA HQ, and numerous research collaborations with small businesses under SBIRs and STTRs while at MIT. He developed three major technology research laboratories that flew on Shuttle, Mir and ISS, including the first crew-interactive experiment on ISS. Miller is a member of the National Academy of Engineering. Other honors include AIAA Fellow, several NASA spaceflight Group Achievement awards, Air Force Exceptional Public Service award, and chaired, full professor at MIT. Miller received his BS, MS, and ScD in the Department of Aeronautics and Astronautics at MIT.

Bhaven Sampat

Member

Bhaven N. Sampat is a Professor in the School for the Future of Innovation in Society and the School of Public Affairs at Arizona State University (ASU), and is based at the ASU Consortium for Science, Policy, and Outcomes in Washington, DC. He is also a Research Associate at the National Bureau of Economic Research (NBER), in the Productivity, Innovation, and Entrepreneurship Program, and a founding member of the NBER Innovation Information Initiative. Prior to coming to ASU in 2023, he was a Professor in the Department of Health Policy and Management at Columbia University. Much of his research focuses on the economics and political economy of publicly funded research, life science and pharmaceutical innovation, and on the law and economics of the patent system. His current projects assess the impact of the World War II research effort on the rate and direction of postwar science and innovation; the effects of pharmaceutical patents on innovation, competition and access to medicines in the United States and globally; and the historical political economy of the National Institutes of Health. His previous work includes research on patent-based measures of innovation, patent prosecution and patent quality, and university-industry technology transfer, among other topics. He previously served as a member of the National Academies of Sciences, Engineering, and Medicine committee evaluating SBIR/STTR programs at the National Institutes of Health.

Craig J. Scott

Member

Craig Scott currently serves as a Professor and Associate Chair of the Department of Electrical and Computer Engineering at Morgan State University. He has also served as Interim Dean of the Clarence M. Mitchell Jr. School of Engineering, and as the Chair of the Department of Electrical and Computer Engineering since 2007. He started his career as a VLSI process engineer with the Westinghouse Electric Corporation and in 1983 joined the Naval Research Laboratory as a microwave engineer. In 1992, he joined the faculty at Morgan State University.

Scott is an Advanced Manufacturing Policy Fellow Associate at the National Institute of Standards and Technology (NIST) Office of Advanced Manufacturing. He is also an American Society of Mechanical Engineers Swanson Policy Fellow and is currently the President of the Inclusive Engineering Consortium. He was the inaugural recipient of the ECEDHA Diversity Award in 2013 and has been named a NASA/ASEE Fellow and an Army Science Board consultant. He is also a member of the Institute of Electrical and Electronics Engineers.

Scott received his PhD in electrical engineering from Howard University, his MS in electrical engineering from Cornell University, and his BS in electrical engineering from Howard University.

Stephanie S. Shipp

Member

Stephanie S. Shipp is Research Professor in the Department of Statistics at Iowa State University. Until recently, in 2024, she was acting director and professor in the Social and Decision Analytics Division of the Biocomplexity Institute at the University of Virginia. From 2007 to 2013, she was a researcher at the Institute for Defense Analyses, Science and Technology Policy Institute, leading research and analysis of U.S. and global advanced manufacturing trends, technology transfer, and federal science and technology program evaluation. From 2000 to 2008, Shipp was a member of the Senior Executive Service and director of the Economic Assessment Office in the Advanced Technology Program at the National Institute of Standards and Technology. She expanded the economic evaluation capacity of that program by inviting and funding collaboration among academic and nonacademic researchers. She began her career at the Federal Reserve Board, followed by leadership positions at the Bureau of Labor Statistics and the Census Bureau. She has served on National Academies of Sciences, Engineering, and Medicine committees, most recently to evaluate the SBIR/STTR programs at the Department of Energy, National Institutes of Health, and National Science Foundation. Shipp earned a PhD in economics from George Washington University.

Eric Stallmer

Member

Eric Stallmer is the Executive Vice President for Government Affairs and Public Policy for Voyager Technologies. He is responsible for representing the interests of Voyager to key government institutions including Congress, the White House, and the many federal agencies that impact the success of Voyager Technologies. Prior to joining Voyager, Stallmer was the President of the Commercial Spaceflight Federation (CSF). CSF is the most recognized and largest trade organization dedicated to promoting policies and best practices that foster the development of the commercial spaceflight industry. Stallmer served on several federal advisory boards including the Defense Innovation Board, as well as the Federal Aviation Administration's Commercial Space Transportation Advisory Committee. He was appointed to the National Space Council Users' Advisory Group where he sat on the Executive Committee and served as the Co-Chair of the Economic Development and Industrial Base Subcommittee. He has testified numerous times to the United States Congress and state legislatures. Stallmer served as an officer in the United States Army and Army Reserves. His final assignment as a reservist was at the Pentagon in the Office of the Deputy Chief of Staff of the Army. He received his MPA from George Mason University.

Janet Vertesi

Member

Janet Vertesi is Associate Professor of Sociology at Princeton University and has spent nearly twenty years studying NASA's robotic spacecraft teams as an ethnographer and social scientist. She is solo author of the award-winning books *Seeing Like a Rover: How Robots, Teams and Images Craft Knowledge of Mars* and *Shaping Science: Organizations, Decisions, and Culture on NASA's Teams* (both University of Chicago Press), co-editor of the MIT Press *Infrastructures Series*, and she publishes in top ranked venues in the sociology of science and technology and human-computer interaction. Vertesi's research at NASA has been funded by numerous grants from the National Science Foundation, and her current work at the CERN collaboration is funded by the Alfred P. Sloan Foundation. She has served on NASA Independent Review Boards for two missions, is a faculty affiliate of the Center for Information Technology Policy at Princeton and former advisory board member of the Data and Society Institute. Vertesi received her PhD in science and technology studies from Cornell University in 2009.

Angelino C. Viceisza

Member

Angelino Viceisza is Full Professor of Economics at Spelman College, Research Associate of the National Bureau of Economic Research, President of the National Economic Association (2023-2024), and Associate Editor at Journal of Economic Behavior and Organization. During the 2023-2024 academic year, he is Dr. Martin Luther King, Jr. and Phyllis Wallace Visiting Professor at MIT Sloan School of Management.

Viceisza's primary expertise is in behavioral and experimental economics, with applications in development, household finance, and entrepreneurship. His research has been published in peer-reviewed journals such as Economic Inquiry, Experimental Economics, Journal of Development Economics, Journal of Economic Behavior and Organization, Journal of Economic Perspectives, Review of Black Political Economy, and Small Business Economics. This work has been supported by agencies such as the Kauffman Foundation, the National Science Foundation, the Social Security Administration, the United States Agency for International Development, and the World Bank.

Viceisza holds a PhD in economics from Georgia State University, an MA in economics from Georgia State University, an MA in economics from Boston University, an MBA in international business from Temple University, and a BS in accounting from University of Curaçao.

Gail Cohen

Staff Officer