NATIONAL ACADEMIES *Sciences Engineering Medicine*

Understanding and Scoping Future Research on Disruptive Innovation: A Workshop

May 20, 2026

Hosted by the Strategic Council for Research Excellence, Integrity, and Trust

Understanding and Scoping Future Research on Disruptive Innovation: A Workshop
May 20, 2026
National Academies of Sciences Building, Washington, DC
Lecture Room and Online

8:30-9:00 AM **Breakfast**

9:00-9:30 AM **Welcome and Overview of Day One**

Speakers:
- **Marcia McNutt,** President – *National Academy of Sciences* (recorded remarks)
- **Kaigham Gabriel**, Chief Executive Officer – *BioForge***

9:30-11:00 AM **If You Saw a Disruptive Innovation Walking Down the Street, Would You Recognize It?**

Moderator: **Jenn Gustetic**, Director, Metascience and R&D Policy – *Institute for Progress*

Speakers:
- **Tasuku Kitada,** President, Head of R&D, and Co-Founder – *Strand Therapeutics*
- **Kumar Garg**, President – *Renaissance Philanthropy*
- **Amy Duwel,** Chief Scientist – *STR*
- **Jack Long**, AI Adoption – *OpenAI*

11:00-11:15 AM **Break**

11:15-12:45 PM **How is Disruptive Innovation Measured and Assessed, and How Should It Be Measured and Assessed? Are Metrics and Indicators Doomed to Be Rear-View Mirror Measures?**

Moderator: **Tim Simcoe**, David J. McGrath Professor of Strategy and Innovation – *Boston University*

Speakers:
- **Erin Leahey,** Professor and Director of Sociology – *University of Arizona*
- **Munjung Kim**, PhD Candidate at the School of Data Science – *University of Virginia*
- **Kristine Willis**, President and Founder – *Woodley Park Institute*
- **Yian Yin,** Assistant Professor of Information Science – *Cornell University*

12:45-1:30PM **Lunch**

1:30-3:00PM **Breakout Sessions (IN PERSON ONLY)**

Topics:
- Metrics and Indicators of Disruptive Innovations
- Key Elements and Enabling Factors for Disruptive Innovations
- Trajectories of Disruptive Innovations

3:00-3:15PM **Break**

3:15-4:00 PM **What Insights Were Revealed During the Breakout Sessions?**

Moderator: **Sarah Rovito**, Senior Program Officer – *National Academies of Sciences, Engineering, and Medicine*

Speakers:

- **Cassidy Sugimoto,** Tom and Marie Patton Professor and School Chair, Jimmy and Rosalynn Carter School of Public Policy – *Georgia Institute of Technology*
- **Dean Chang**, Chief Innovation Officer – *University of Maryland*
- **Mike Alvarez Cohen,** Director of Innovation Ecosystem Development – *University of California, Berkeley*

4:00-5:00 PM **What Are Broader Reactions and Next Steps?**

Moderator: **Bernard Meyerson**, Chief Innovation Officer Emeritus – *International Business Machines Corporation*

Speakers:

- **Safi Bahcall**, Private Investor – *Folkman Ventures*
- **Holly Mayton**, Science, Technology, and Policy Partnerships Lead – *John Deere*
- **Nathan Moody**, Program Manager, Mission Innovation Office – *Los Alamos National Laboratory*
- **Thomas Weiser**, Clinical Professor, Surgery – *Stanford University School of Medicine*

5:00-5:30 PM **Closing Remarks**

Speaker:

- **Kaigham Gabriel**, Chief Executive Officer – *BioForge***

*All times U.S. Eastern
**Chair of the Understanding and Scoping Future Research on Disruptive Innovation Planning Committee

Speaker Biographies

Safi Bahcall
Safi is a second-generation physicist, a biotech entrepreneur, and former public-company CEO. He received his BA summa cum laude from Harvard and his PhD in physics from Stanford, where he worked with Lenny Susskind in particle physics (the science of the small) and the Nobel laureate Bob Laughlin in condensed matter physics (the science of the many). He was a Miller Fellow in physics at UC Berkeley (the school of the many). After working for three years as a consultant for McKinsey, Safi co-founded a biotechnology company developing new drugs for cancer. He led its IPO and served as its CEO for 13 years. In 2008, he was named E&Y New England Biotechnology Entrepreneur of the Year. In 2011, he worked with President Obama's council of science advisors (PCAST) on the future of national research. *Loonshots*, Safi's first book, has been translated into 21 languages and was selected as a best business book of the year by Amazon, *Bloomberg, Financial Times, Forbes, Inc., the Washington Post* and more. It was the #1 most recommended book of the year in Bloomberg's annual survey of CEOs, and has been recommended by Bill Gates, Daniel Kahneman, Malcolm Gladwell, Tim Ferriss, Gen. Stanley McChrystal, and more. Safi advises CEOs and leadership teams on strategy and innovation, and has delivered keynote presentations at industry conferences, investor events, leadership retreats, medical meetings, and leading academic institutions around the world. He lives with his wife and two children in Washington, DC.

Dean Chang
Dr. Dean Chang is University of Maryland's Chief Innovation Officer and coordinates UMD's innovation, entrepreneurship, and economic development ecosystem. In 2013 Dr. Chang co-founded the Academy for Innovation and Entrepreneurship (AIE) to engage every college in design thinking and lean startup. Dr. Chang serves on venture fund investment committees; is the lead PI for NSF's I-Corps Hub program; and leads workshops for students, faculty, and working professionals from industry and government. He also coaches in the Stanford d.school's Teaching and Learning Studio. Prior to UMD, Dr. Chang spent 15 years in Silicon Valley and was CTO of Immersion Corporation, a venture-backed, Stanford spinout he helped transform into a publicly traded (NASDAQ: IMMR), world-leading licensor of haptics technology found in products from Apple, BMW, Microsoft, Samsung, and Electronic Arts. Dr. Chang holds over 40 patents, a B.S. from MIT, an M.S. and Ph.D. from Stanford, and an MBA from Wharton.

Mike Alvarez Cohen
Mike Alvarez Cohen is director of innovation ecosystem development at the University of California, Berkeley. In this role, he develops initiatives and agreements that support the commercialization of university innovations and the funding of campus research. He works with faculty, students, startup companies, corporations, entrepreneurs, investors, and attorneys to advance technology transfer and new venture creation. Cohen has worked with hundreds of startups and has led the commercialization of more than 100 innovations across fields including biofuels, medical devices, nanotechnologies, novel materials, photovoltaics, robotics, semiconductors, software, smart grid technologies, wireless sensors, and biomimetic systems. His work focuses on building partnerships and structures that connect academic research with industry and investment communities. He is the author of Startup Campus: How UC Berkeley Became an Unexpected Leader in Entrepreneurship and Startups (2025). His honors include the Berkeley Visionary Award (2017) and the UC Berkeley Chancellor's Outstanding Staff Award (2012, 2019, and 2023). Cohen earned an MBA from Harvard University and engineering degrees from Tufts University.

Amy Duwel
Dr. Amy Duwel is a Chief Scientist at Systems & Technology Research, where she leads multidisciplinary research programs integrating signal processing and novel sensors for application domains ranging from military technology to agriculture and medicine. Her career began with a PhD in Electrical Engineering at

Massachusetts Institute of Technology, followed by more than 22 years at the Charles Stark Draper Laboratory. At Draper, she proposed and led research and development projects for more than a decade before serving as Director of Materials and Devices, where she guided applied scientists across disciplines of chemistry, materials, biology, and physics. She later served as Draper's Director of Internal Research and Development, creating a use-inspired technology innovation portfolio, and strengthening mechanisms for technology transition. Amy has a passion for team science and problem-driven innovation.

Kaigham Gabriel
Kaigham (Ken) J. Gabriel is chief executive officer of BioForge, where he leads efforts to advance the development and manufacturing of biologic precision medicines. He also serves on the boards of Trimble, Galvani Bioelectronics, Dover Microsystems, and Seegrid. Previously, he was founding chief operating officer of Wellcome Leap, where he helped launch ten international research programs spanning areas from artificial kidneys to resilient aging. Earlier, he served as president and chief executive officer of Draper, an MIT-affiliated engineering organization, and as corporate vice president and founding co-lead of Google's Advanced Technology and Projects group. He also held senior federal leadership roles as deputy director and acting director of DARPA and was a tenured professor of electrical and computer engineering and robotics at Carnegie Mellon University. His work spans engineering innovation across defense, life sciences, robotics, space systems, and biomedical technologies, including early contributions to microelectromechanical systems (MEMS). He co-founded Akustica, a company focused on digital silicon microphones. Gabriel earned a doctorate in electrical engineering and computer science from the Massachusetts Institute of Technology. He previously served as a member of the National Academies German-American Frontiers of Engineering Organizing Committee.

Kumar Garg
Kumar Garg is the President at Renaissance Philanthropy. Kumar has helped to shape the science and tech landscape for almost two decades. Working with Eric Schmidt, he helped design and launch moonshot initiatives in education, provided early support to game-changing ideas and pioneers, and built ongoing multi-donor and multi-sector collaboratives. Prior to that, he helped set budget and policy priorities for the Obama Administration as part of the White House Office of Science and Technology Policy, and drove progress on topics ranging from education and workforce issues, biotechnology, entrepreneurship, space, advanced manufacturing, broadband, nanotechnology, behavioral sciences, digital media, incentive prizes, and broader innovation policy. In particular, he led the Obama Administration's efforts to bolster science, technology, engineering and math (STEM) education, including development of major budget and policy initiatives in the State of the Union to train 100,000 excellent STEM teachers and bring computer science to all K-12 students, development of the Educate to Innovate campaign with over $1 billion in in-kind and philanthropic investment, and creation of iconic events such as the White House Science Fair. Prior to his time in government, Kumar worked on behalf of parents and children seeking educational reform as an education lawyer and advocate. Kumar received a B.A. from Dartmouth College and a law degree from Yale Law School.

Jenn Gustetic
Jenn Gustetic is a technology innovation and commercialization executive with nearly 20 years of experience accelerating breakthrough technologies from lab to market. She most recently served as deputy associate administrator for management in NASA's Space Technology Mission Directorate and was a member of the Senior Executive Service. During her tenure at NASA, she managed more than $2 billion in early-stage technology investments across portfolios that included prize competitions, partnerships, and the SBIR/STTR programs. She also served at the White House Office of Science and Technology Policy, where she developed open innovation programs for the federal government. Her professional work centers on technology innovation and commercialization, including portfolio management, cross-sector partnerships, and the development of innovation infrastructure within complex systems. Gustetic has received NASA's Outstanding Leadership Medal (2025) and Exceptional Performance Award (2017), was named to the Fed100 (2024), and was a finalist

for the Samuel J. Heyman Service to America Medal (2016). She earned a master's degree in technology policy from the Massachusetts Institute of Technology and a bachelor's degree in aerospace engineering from the University of Florida. She completed a research fellowship at Harvard Kennedy School and the Stanford Graduate School of Business VC Unlocked executive education program.

Tasuku Kitada
Tasuku Kitada, Ph.D., MBA, is the Co-Founder, Board Director, President, and Head of R&D at Strand Therapeutics, a Boston-based clinical-stage biotechnology company developing programmable mRNA medicines for cancer and autoimmune diseases. He oversees the development of Strand's Signal Stack platform, which applies computational design principles to enable tissue-selective and precisely controlled therapeutic protein expression using AmpliScript self-replicating RNA and EverScript circular RNA technologies. Dr. Kitada's work increasingly focuses on the integration of artificial intelligence and computation with synthetic biology, including the use of data-driven models to design, optimize, and predict the behavior of complex RNA regulatory systems and therapeutic payloads. Prior to co-founding Strand, he was a biotech investment analyst at Candriam Investors Group, a global asset management company based in Brussels. He holds a B.S. in Biophysics and Biochemistry from the University of Tokyo, a Ph.D. in Molecular Biology from UCLA, and conducted postdoctoral research at MIT's Synthetic Biology Center. He also holds an MBA from the Wharton School of the University of Pennsylvania.

Munjung Kim
Munjung Kim is a Ph.D. candidate at the School of Data Science, University of Virginia, advised by Yong-Yeol Ahn. Her research lies at the intersection of the science of science, computational social science, and machine learning, with a particular focus on developing and applying neural embedding models to study scientific innovation. Her recent work in *Science Advances*, "Uncovering simultaneous breakthroughs with a robust measure of disruptiveness," introduces an embedding-based metric that reliably identifies disruptive scientific contributions and reveals previously hidden simultaneous discoveries. She holds a B.S. in Physics from POSTECH, has interned at Nokia Bell Labs, and is a recipient of the Humane Studies Fellowship from the Institute for Humane Studies.

Erin Leahey
Erin Leahey is Professor of Sociology at the University of Arizona and an elected member of the Sociological Research Association. She has secured over $4 million in research funding to support her research on science and innovation. Recent awards include the Fulbright-Schumann Innovation Award and a University of Arizona Convergence Award. Her contributions to the new interdisciplinary field *Science of Science* include studies of specialization, interdisciplinarity, collaborative teams, novelty, disruption, and humility in inquiry. Recent publications include "What Types of Novelty are Most Disruptive?" published in the *American Sociological Review*, and "Papers and patents are becoming less disruptive over time," which made the cover of *Nature*. These two papers, published in 2023, have already been cited over 1200 times.

Jack Long
Dr. Jack Long manages AI adoption at OpenAI. He holds a PhD from Johns Hopkins University, having done his undergraduate and doctorate work there. Upon finishing his PhD work in 2005, he joined the Marines and was commissioned a 2nd Lieutenant in the Marine Corps. He spent eight years on active duty, deploying six times to Central Command in support of OIF, OEF, and other operations. After leaving active duty, he attended the University of Oxford, where he earned an MBA, graduating with distinction. He stayed on at the University in an Innovation Fellowship, working to build startups based on University IP, and was the CEO-designate of an early-stage spinout. He returned to the states and joined McKinsey & Company, working out of the DC office, where he worked on numerous strategy and transformation projects with clients in the public, private, and government sector. He was recruited to lead the post-merger integration efforts in the North American Business Unit of IDEMIA, the world's leader in Augmented Identity. He stayed on as a leader in the strategy, innovation, and corporate development functions before leaving to join a boutique startup A&D consulting firm,

helping to grow it into an elite firm that partners with clients to help them solve some of their thorniest strategy, operations, and transformation challenges.

Bernard Meyerson
Joining IBM in 1980, Dr. Meyerson invented Silicon:Germanium technology, founding IBM's highly successful Analog and Mixed Signal business. He has held many executive roles, leading semiconductor development, IBM's strategic alliances, and culminating in his role as IBM's first Chief Innovation Officer. His team led the definition and integration of corporate-wide technical and business strategic initiatives. Dr. Meyerson co-chairs the World Economic Forum's team that provide the annual list of top 10 emerging technologies, serves on the US Board of Directors supporting Japan's STS Forum, and the International Advisory Panel supporting Singapore. Dr. Meyerson, an IBM Fellow, is a Fellow of the American Physical Society, the Institute of Electrical and Electronics Engineers (IEEE), and is a member of the United States National Academy of Engineering. He has received numerous technical and business awards, such as the Lifetime Achievement Award from SEMI, the 2011 Pake Prize of the American Physical Society, selected as the 2014 Turing Lecturer at the Royal Institute. Most recently Dr. Meyerson was granted Singapore's Gov't Medal for Public Service in recognition of his contributions to that nation's science, technology, and society. Dr. Meyerson has served as IBM's Chief Innovation Officer Emeritus since 2020.

Tim Simcoe
Timothy S. Simcoe is the David J. McGrath Professor of Strategy and Innovation and at the Boston University Questrom School of Business. He is a Research Associate at the National Bureau of Economic Research, and a faculty director of BU's Technology Policy Research Initiative. From 2014 to 2015, Dr. Simcoe served as a Senior Economist on the President's Council of Economic Advisers. Professor Simcoe's research focuses on innovation, industry standards, intellectual property, antitrust, and technology policy. He has published in leading economics and management journals, including the American Economic Review and Management Science. Dr. Simcoe serves on several editorial boards and has been a member of panels convened by the National Academies of Science and the National Institute of Standards and Technology. He has consulted and testified as an expert witness in several matters related to antitrust and intellectual property. Dr. Simcoe holds a B.A. in Applied Mathematics from Harvard, along with an M.A. in Economics and a Ph.D. in Business Administration from the University of California, Berkeley.

Cassidy Sugimoto
Cassidy Sugimoto is Tom and Marie Patton Professor and chair of the Jimmy and Rosalynn Carter School of Public Policy at the Georgia Institute of Technology. Previously, she was professor of informatics at Indiana University and served as program director for the Science of Science and Innovation Policy program at the National Science Foundation. Her research examines the scientific enterprise from a quantitative, macro-level perspective, with particular attention to patterns of globalization and the organization of research systems. Her work addresses trends in scientific production, collaboration, and policy across national and institutional contexts. She earned an undergraduate degree in music performance, a master's degree in library science, and a doctorate in information and library science from the University of North Carolina at Chapel Hill.

Thomas Weiser
Thomas Weiser is a general, emergency, and trauma surgeon in the Department of Surgery at Stanford University. He cares for injured and acutely ill surgical patients throughout the hospital, including the surgical intensive care unit. He is the Director of Global Engagement in the Department, driving cross-border initiatives, education, research, innovation, and collaboration in surgical care. He was recently the Program Director for Wellcome Leap where he led the $50M SAVE program (Surgery: Assess / Validate / Expand). SAVE aimed to accelerate the acquisition of surgical skills and reduce mortality following surgery through enhanced monitoring and early prediction of deterioration. He is Chair of the Board for Lifebox, a charity dedicated to improving surgical and anesthetic safety worldwide.

Kristine Willis
A systems biologist by training, Dr. Willis has a strong track record of applying computational and data science approaches to large-scale administrative and bibliometric data to generate novel insights into the drivers of scientific productivity and progress. Her most recent work describes an approach to predicting transformational breakthroughs in biomedical science. In her previous capacity as a program director at NIH, she represented the agency on several high-profile initiatives to improve rigor and reproducibility in research. She also oversaw the implementation of the Maximizing Investigators' Research Award (R35) program for Early Stage Investigators at the National Institute of General Medical Sciences, an innovative alternative to traditional project-based funding that supports the full program of research in the laboratory of awardees. As the founder and current President of the Woodley Park Institute, she seeks to translate her experience and insights into evidence-based strategies for improving how scientific research is supported and evaluated.

Yian Yin
Yian Yin is an assistant professor of information science. His research applies and develops novel computational tools to understand how individual, social, and environmental processes independently and jointly promote (or inhibit) scientific progress and innovation achievements. As a computational social scientist, he has also used science and innovation as a powerful lens to examine broader processes and outcomes in a wide range of complex social processes, from artistic and cultural productions to public policy, from media attention to market competition to human conflict. His research has been published in top general audience venues such as Science, Nature, and Nature Human Behaviour and featured in media outlets such as Forbes, Scientific American, The Atlantic, Harvard Business Review, and MIT Technology Review. In 2023, he was named to Forbes 30 under 30: Science list. Yian received his Ph.D. in industrial engineering and management science at Northwestern University, with research affiliations at Northwestern Institute on Complex Systems and Kellogg Center for Science of Science and Innovation. He holds bachelor's degrees in statistics and economics from Peking University.