

GUIRR Meeting: Interpreting the Axioms of Innovation

Government-University-Industry Research Roundtable

June 13-14, 2023

Speaker Biographies

Keynote:



Regina E. Dugan is President & CEO of Wellcome Leap Inc.

Regina is an internationally recognized business executive, producer, engineer-artist, taskmaster, and product developer. She has led world-class, global teams, and hundred-million to multi-billion dollar efforts to deliver breakthrough products at Facebook, Google, Motorola, as the 19th Director, and first woman to lead, the Defense Advanced Research Projects Agency (DARPA). FORTUNE described Dugan as one of the world's leading experts on product innovation, "the kind that unhinges old ways of operating, juices

competition and creates new growth." She has been named to the Verge 50 list, Fast Company's 'Most Creative People in Business 1000,' CNN's 'Top 10 Thinkers', and CNBC's 'NEXT LIST'. As executive producer, she has 4 Annie Awards, 1 Emmy, and 1 OSCAR nomination.

She holds her PhD in mechanical engineering from Caltech, where she is a Distinguished Alumnus (one of 256 historical honorees including Carver Mead and Gordon Moore) and her BS/MS from VaTech, where she was inducted to Academy of Engineering Excellence.

Panel 1:



Sandra Barbosu is Program Officer in the Economics Program at the Alfred P. Sloan Foundation, where she oversees and assists in the evaluation of grant proposals and strategy development. From 2018 to 2022, Sandra served as the Foundation's Program Associate in Economics. Prior to joining the Foundation, Sandra was a Postdoctoral Fellow in Strategy and Digitization at the University of Toronto. Her fields of specialization are the economics of innovation, digitization, precision medicine, and science of science. Sandra holds a Ph.D. in Strategic Management from the University of Toronto's Rotman School of Management, an M.S. in Precision Cancer Medicine from the University of Oxford, and a B.A. in Economics and Mathematics from the University of Rochester.



Russell Funk is Associate Professor in the Strategic Management and Entrepreneurship group at the University of Minnesota's Carlson School of Management. Before joining the faculty at U-Minnesota, he earned his PhD in economic sociology and organizations at the University of Michigan. His research focuses primarily on network science, technology strategy, and the science of science. He also has a large stream of research that applies methods from network science to the study of health care delivery and reform. Findings from his work have been published in a number of different outlets, including *Nature*, *Administrative Science Quarterly*, *Academy of Management Journal*, *Academy of Management Review*, *Management Science*, and *MIS Quarterly*, and *Strategic Management*, among others. Support for his research has come

through grants from the National Science Foundation, Agency for Healthcare Research and Quality, National Institutes of Health, National Institute for Health Care Management, the University of Minnesota Grand Challenges Initiative, and several other groups.



Dashun Wang is a Professor at the Kellogg School of Management and McCormick School of Engineering at Northwestern University. He is the Founding Director of the Center for Science of Science and Innovation (CSSI). He is also a core faculty at the Northwestern Institute on Complex Systems (NICO). His current research focus is on *Science of Science*, a quest to turn the scientific methods and curiosities upon ourselves, hoping to use and develop tools from complexity sciences and artificial intelligence to broadly explore the opportunities for innovation and promises of prosperity offered by the recent data explosion in science. His research has been published in journals like *Nature* and *Science*, and has been featured in virtually all major global media outlets. Dashun is a recipient of multiple awards for his research and teaching, including the AFOSR Young Investigator

award, Poets & Quants Best 40 Under 40 Professors, Complex Systems Society's Junior Scientific Award, the Erdos-Renyi Prize, Thinkers50 Radar, and more.

Panel 2:



Cordell Hardy is the Senior Vice President of Global R&D Operations, Corporate Research & Development, at 3M Company Headquartered in St. Paul, MN. Reporting to the Chief Technology Officer, this role provides a range of critical capabilities required within 3M's corporate technical organization. Examples include hiring/HR processes, crisis management (COVID-19 workplace risk mitigation, for example), analytical laboratories, digital media technical support, and product stewardship. Cordell has a B.S. and a Ph.D. in Chemical Engineering from Florida A&M and the University of Minnesota, respectively. After joining 3M, Cordell worked in the Consumer Business Group, first as a product developer for consumer adhesives and tapes, then in various management roles within Stationery Products and Home Care laboratories. He then joined the Safety & Graphics Business Group in 2012, taking on a number of managerial assignments prior to his current role.

Cordell is an active community advocate and serves on the Board of Directors of Minnesota Community Care, a large health clinic providing cost-effective care to underserved populations, as well as the Board of the 3M Foundation. He and his wife, Amelia, have four children.



Leonard (Len) Polizzotto is currently Distinguished Executive in Residence and an Affiliate Professor of Biomedical Engineering at Worcester Polytechnic Institute; an Executive in Residence at Northeastern University; program manager for the Neurocritical Care Society Curing Coma Campaign, and a partner in The Practice of Innovation. He works with individuals, including faculty and students, to help them focus their research and projects on important problems and with innovative solutions that matter. In addition, he is working with a team of neuro-intensive care clinicians in an effort to find a cure for coma. He is a former vice president at Draper Laboratory, SRI International, and the Polaroid Corporation, as well as a member of the Smithsonian Lemelson Center for Invention and Innovation advisory board.

He is a Charter Fellow in the National Academy of Inventors. He received his Ph.D. in visual sciences, combining electrical engineering, perceptual psychology, and ophthalmology, from Tufts University. He earned M.S. and B.S. degrees in electrical engineering from Worcester Polytechnic Institute, where he was an NCAA Post Graduate Scholar. He holds twelve patents and is the co-author of articles on efforts to cure coma, color perception, and innovation. He has also published two books on drum set instruction.



Evelyn N. Wang currently serves as the Director at the Advanced Research Projects Agency-Energy (ARPA-E), where she leads the Agency's development, launch, and execution of high-risk, high-reward energy research and development programs.

Prior to joining ARPA-E, Dr. Wang served as the Ford Professor of Engineering and Head of the Department of Mechanical Engineering at Massachusetts Institute of Technology (MIT). During her time at MIT, she focused on thermal management, thermal energy conversion and storage, and water harvesting and purification.

Dr. Wang was previously the Associate Director of the MIT Solid-State Solar-Thermal Energy Conversion Center, a DOE Energy Frontiers Research Center.

Earlier in her career, Dr. Wang worked as a postdoctoral researcher at Bell Laboratories, Alcatel-Lucent and as a consultant for the Defense Science Study Group, where she advocated for collaboration between academia and national defense to solve issues of national security.

Dr. Wang holds a Ph.D. in Mechanical Engineering from Stanford University. She also received an M.S. in Mechanical Engineering from Stanford University and a B.S. in Mechanical Engineering from MIT. She is an ASME and AAAS Fellow.

Panel 3:



Chux Daniels is the Director of the Transformative Innovation Africa Hub (TIAH) and Senior Fellow at Future Africa, University of Pretoria, South Africa. Prof. Daniels is also a Research Fellow in Science, Technology and Innovation (STI) Policy at the prestigious Science Policy Research Unit (SPRU), University of Sussex Business School, United Kingdom, where he leads the Transformative Innovation Policy Consortium (TIPC) research and engagements on Africa. His research interests and topics include STI, digital, transformation, sustainability and the SDGs, capabilities, and political economy. He is widely published on these topics. Besides his academic activities, he is actively involved in public policies and policymaking. He has delivered innovation and policy projects for several governments and organizations including the African Union, UN (UNTAD, UNTB, ESCAP, DESA, UNESCO), European Commission, World Bank and many others. He holds his PhD in Science and Technology Policy Studies from the University of Sussex, UK.



Jeroen Groenewegen-Lau is Head of Program of "Science, Technology and Innovation" at MERICS. Prior to that he worked at "China Policy", a Beijing-based research and advisory company. He set up the section education, science and innovation at China Policy in 2017, and led it until December 2020. Jeroen spent over ten years in China. He holds a master's degree Languages and Cultures of China from Leiden University and wrote about Chinese popular music in his PhD dissertation.



Taiga Nakamura is Senior Research Manager at IBM Research. Dr. Nakamura has 20+ years of experience in computer science and software engineering. He has been Research Scientist at IBM Research since he joined IBM Japan in 1999. Since April 2013, he is working at IBM Research-Almaden in San Jose, California, where he presently is Senior Research Scientist and Manager of AI Enterprise Solutions Research group.

He is currently leading a global research initiative that delivers AI and analytics capabilities for enterprise, with respect to data management and processing, requirements understanding, solution discovery, cost and price competitiveness, decision support, and digital experience. His research experience also includes software quality, document analytics, and services science. He received IBM Corporate Award for Analytics for GTS Solutioning (Franz-Edelman Award Finalist) in 2020, ISSIP Excellence In Service Innovation Award in 2018, and over 15 IBM Research Accomplishments awards for academic and business impacts. He co-authored over 50 technical papers and books, as well as over 50 patents issued and filed pending. Taiga received PhD in Computer Science from University of Maryland, and Master & Bachelor of Engineering from University of Tokyo, respectively. He is a member of ACM, IEEE, and IPSJ.



Ambuj Sagar is the Deputy Director (Strategy & Planning) and the Vipula and Mahesh Chaturvedi Professor of Policy Studies at the Indian Institute of Technology Delhi. Dr. Sagar previously was the founding Head of the School of Public Policy.

Ambuj's interests broadly lie at the intersection of science, technology and development. His recent work has focused on innovation policy for meeting sustainability and inclusivity challenges, energy innovation policy and strategies (in areas such as biofuels, clean cookstoves, coal power, automobiles, and institutional mechanisms such as climate innovation centers), climate change policy and politics, capacity development, and higher education policy.

Ambuj has been on numerous national and international expert groups and also has been consultant/advisor to various Indian Govt. agencies as well as many multilateral and bilateral agencies. He was a Lead Author in WGIII of the IPCC's Sixth Assessment Report and currently is a member of the Independent Group of Scientists appointed by the UN Secretary-General to prepare the Global Sustainable Development Report 2023 and a member of the Science and Security Board of the Bulletin of Atomic Scientists (which is the group that sets the hands of the Doomsday Clock).

Panel 4:



Christine Callsen is the director of strategy & growth for MITRE Labs, an organization that employs over 4,300 engineers, scientists, analysts and strategists working in the public interest to pursue and execute whole-of-nation initiatives to address national and global-scale challenges. As part of her portfolio, Callsen is responsible for the Horizon Strategy framework, under which MITRE Labs develops and executes new, high impact applied science and advanced technology programs. In addition, she leads MITRE Labs' external engagement and new program development capabilities and is responsible for nurturing substantive, technical relationships with industry, academia, and non-profits to ensure MITRE is postured to drive whole-of-nation impact.

Callsen began her career as in academia, working to develop industry, government, and university partnerships for the University of Wisconsin-Madison, and later helping to found and grow the Hume Center for National Security and Technology, Virginia Tech's research and experimental learning institute focused on defense and intelligence. She holds bachelor's and master's degrees from the University of Wisconsin, a Certificate in Executive Leadership from the MIT Sloan School of Management, is a Non-Resident Fellow at the Virginia Tech National Security Institute, and serves on non-profit boards in the Washington, DC arts community.



Amy E. Herr is the John D. & Catherine T. MacArthur Professor of Bioengineering at the University of California, Berkeley and a [Chan Zuckerberg \(CZ\) Biohub Investigator](#). Through early 2024, Prof. Herr is on temporary leave from UC Berkeley and CTO of the Chan Zuckerberg Biohub Network. Her UC Berkeley research group remains active.

Prior to joining UC Berkeley, she was a staff member in the Biosystems Research Group at Sandia National Laboratories (Livermore, CA; 2002-2007). She earned her PhD and MS in Mechanical Engineering at Stanford, and a BS in Engineering & Applied Science from Caltech. She is an elected Fellow of the National Academy of Inventors and the American Institute of Medical and Biological Engineering (AIMBE), as well as a successful entrepreneur. She is a co-inventor on >60 unique

patent applications with 36 issued patents.

Prof. Herr serves on the NIH [National Advisory Council of Biomedical Imaging and Bioengineering](#) and the [DARPA Biological Technology Office's](#) inaugural Biological Insights advisory board. She is a Board Member of the [Chemical & Biological Microsystems Society](#) which oversees the microTAS conferences, served as a standing member of the NIH Nanotechnology Study Section (2013-19), and was a member of the 2018-2019 class of the Defense Science Study Group (DSSG), IDA/DARPA. She has served as a Co-Director of the Cold Spring Harbor Laboratory's Single Cell Analysis summer course (2015 & 2016), both Chair (2009) and Vice-chair (2007) of the [Gordon Research Conference \(GRC\) on the Physics & Chemistry of Microfluidics](#). She is faculty advisor to the [UC Berkeley chapter of the Society of Women Engineers](#) and the Graduate Women in Engineering.

Prof. Herr's research has been recognized prominent international and national organizations, including: 2018 Sciex Microscale Separations Innovation Medal, 2017 Georgina Sweet Lectureship from the Australian Research Council, 2016 Mid-career Achievement Award from the American Electrophoresis Society, 2015 Georges Guiochon Faculty Fellow from HPLC, 2012 Young Innovator Award from Analytical Chemistry/CBMS, 2011 NSF CAREER award, 2010 NIH New Innovator Award, 2010 Alfred P. Sloan Research Fellowship in chemistry, 2010 New Investigator Award in Analytical Chemistry from Eli Lilly & Co., and a 2009 Defense Advanced Research Projects Agency (DARPA) Young Faculty Award. Her commitment to creating a strong professional community is reflected in recognition as: 2019 Award for Excellence in Postdoctoral Mentoring, Visiting Scientist & Posdoc. Assoc. at UC Berkeley, 2017 Berkeley Visionary Award from the City of Berkeley Chamber of Commerce, and 2007 Outstanding Mentor Award from Sandia National Labs.



Megan C. Clifford is Associate Laboratory Director for Science and Technology Partnerships and Outreach. Her focus areas in this role include: maximizing outcomes of existing collaborations and partnerships; supporting the creation of new collaborations and partnerships; and support of lab-wide strategy and program development – all with the goal of increasing the impact of Argonne's work.

Prior to serving in her current role, Clifford served as Argonne's Chief of Staff. Working with leaders across the laboratory, Clifford stewarded Argonne's change initiative to deliver lasting impact through science and technology leadership, research and operations excellence, and people development. She promotes a culture of diversity and inclusion within the laboratory through values-based leadership.

Clifford joined Argonne in November 2013. Prior to becoming Chief of Staff, she served as Director of Strategy and Innovation for the Global Security Sciences division. In this role, she developed strategies and programs with multidisciplinary teams to address a range of energy and global security challenges.

Clifford's career of more than 20 years has focused on national security and resilience policy and analysis, strategic planning, and program design. Her involvement in the national security mission dates back to the establishment of the U.S. Department of Homeland Security, where she helped to create the foremost national preparedness doctrine.

Clifford previously held a senior executive position at Booz Allen Hamilton Inc. in Washington, D.C., where she served on the leadership team responsible for performance of the firm's Justice and Homeland Security business. Clifford received a BA in international business from The George Washington University and an MBA from Northwestern University's Kellogg School of Management.