NATIONAL ACADEMIES Sciences Engineering Medicine

Welcome

Steve Moddemeyer
Committee Chair, Hazard Mitigation and Resilience Applied Research Topics
Principal for Planning, Sustainability, and Resilience, CollinsWoerman Architects

Steve Moddemeyer is a principal of Collinswoerman with 30 + years' experience leading governments, land owners, and project teams towards increased sustainability and resilience. He creates tools, policies and programs that empower communities to implement resilience principles into planning for land use and urban infrastructure. He works on climate change adaptation, sustainability strategies for large urban redevelopments, and advanced sustainability strategies for land owners, cities, counties, and utilities. He is a past member of the National Academies of Sciences Resilient America Roundtable (two terms). He serves as an advisor to the University of Washington Masters in Infrastructure Management and Planning, Member of the International Union for the Conservation of Nature: Resilience Theme Group, and founding member of The Little Think Tank, a group of academic and policy experts that focus on resilient recovery actions for American communities. Trained as a landscape architect, Steve creates multi-benefit implementation strategies that bring together natural and human systems by applying socio-ecological principles to system design, urban design, policy design, and industrial symbiosis development.

Keynote

Dr. Miguel O. Román
Chief Climate Scientist, Leidos
Miguel.O.Roman@leidos.com

Dr. Miguel O. Román serves as Senior Director and Chief Scientist of Climate and Environment at Leidos. As part of the Leidos Civil Group, Román is responsible for planning, leading, directing, and growing a portfolio of integrated mission capabilities, including earth-observing data and information systems, renewable energy, disaster resilience, and sustainable urban infrastructure.

Dr. Román has served in multiple leadership, organizational management, and technical capacities across the federal government, academic, and nonprofit sectors. A leading expert in the field of satellite remote sensing, Román has championed translational research, sustainability science, and data-intensive approaches to assess and address climate-related risks. His work is recognized for shedding light on the disproportionate hardships experienced by socially-vulnerable and underserved communities following major disasters.

A native of San Juan, Puerto Rico, Dr. Román was recognized by President Barack Obama in 2016 with the Presidential Early Career Award for Scientists and Engineers (PECASE). He is also a 2014 Service to America Medal "Sammies" finalist, one of the highest honors for federal employees. Dr. Román holds a bachelor's degree in electrical engineering from the University of Puerto Rico at Mayagüez, a master's degree in systems engineering from Cornell University, and a Ph.D. in geography from Boston University.

Panel 1: Towards a Better Understanding of Cascading and Compounding Disasters: Characterizing Drivers, Systems, and Relationships

Panelists:

Dr. Benjamin Zaitchik
Professor, Department of Earth & Planetary Sciences, Johns Hopkins University
zaitchik@jhu.edu

Dr. Benjamin Zaitchik is a Professor in the Department of Earth and Planetary Sciences at Johns Hopkins University. He is an Earth scientist whose work includes study of fundamental atmospheric and hydrological processes as well as application of this knowledge to problems of water resources, agriculture, and human health. In this context, Dr. Zaitchik leads multiple projects focused on the propagation of climate stresses through complex coupled natural-human systems. Prior to joining Johns Hopkins University, Dr. Zaitchik was a Research Associate at NASA and a AAAS Fellow at the U.S. Department of State. He is currently the President of the GeoHealth Section of the American Geophysical Union, Chair of the World Meteorological Organization Research Board Task Team on COVID-19 and climate, meteorological, and environmental factors, and a Commissioner on the City of Baltimore Sustainability Commission.

Dr. Felicia Jefferson
Associate Professor, Department of Biology, Fort Valley State University
jeffersonf@fvsu.edu

Dr. Felicia Jefferson has served as a Biology and Environmental Science faculty member for a decade. A tenured Associate Professor within the University System of Georgia at Fort Valley State University, she was recently commissioned as the lead author for a publication from the National Academies of Science, Engineering, and Medicine (NASEM). Recent publications are in the areas of neurotoxicology, computer science, environmental biology, and supply chain logistics in health. She also has recent publications using Artificial Intelligence in Biology, CRISPR-Cas9 technology, remodeling of the CREST Model in health delivery mechanisms, the role sleep plays in learning and memory. At her university, Dr. Jefferson has served as PI on seven grants, five federally funded garnering full overhead and as co-PI on other STEM-based grants. Funds from these grants advance scientific research, train students in STEM based technologies, and fund students to participate in national conferences and other training opportunities.

Negar Elhami-Khorasani
Associate Professor, Department of Civil, Structural and Environmental Engineering, University at Buffalo
negarkho@buffalo.edu

Negar Elhami-Khorasani is an Associate Professor in the Department of Civil, Structural and Environmental Engineering at the University at Buffalo. Her primary areas of research are performance-based design and resilience assessment of structures and communities under extreme hazards including structure fires, wildfires, earthquakes, and cascading multi-hazard events, such as post-earthquake fires. The outcomes of her research enhance safety by developing codes and guidelines, and minimize losses

by optimizing mitigation, preparedness, and response strategies. Elhami-Khorasani is the co-Chair of the ASCE/SEI Fire Protection Committee and led the Fire Following Earthquake Task Group in charge of publishing a book on procedures for analysis of buildings for post-earthquake fires. She serves as an associate editor for Fire Technology by Springer Nature. She is also a member of the fib, IAFSS, and the SEAoNY Resilience committees. She was the recipient of the 2020 AISC Early Career Faculty award and the Fire Protection Research Foundation Medal. Her research has been funded by the National Science Foundation, Department of Transportation, United States Geological Survey, National Fire Protection Association, and ASCE Structural Engineering Institute.

Moderators:

Chris Emrich
Committee Member, Hazard Mitigation and Resilience Applied Research Topics
Boardman Endowed Associate Professor of Environmental Science and Public Administration, University of Central Florida

Christopher Emrich is the Boardman Endowed Associate Professor of Environmental Science and Public Administration within University of Central Florida's School of Public Administration and Director of Research in UCF's newly formed National Center for Integrated Coastal Research (UCF Coastal). His research/practical service includes applying geospatial technologies to emergency management planning and practice, long-term disaster recovery analysis, and the intersection of social vulnerability and community resilience in the face of catastrophe. From 2004 - 2008 he provided geospatial support for response and long-term recovery to the states of Florida, Louisiana, and Mississippi and has since been actively involved in understanding how differential recoveries manifest across disaster-stricken areas. Dr. Emrich is actively working at pinpointing challenges to equity in disaster recovery and mitigation and where he has most recently assisted in building empirically based and result-oriented impacts assessments to inform recovery programs in several states and US territories. He has remained at the vanguard of theory, data, metrics, methods, applications, and spatial analytical model development for understanding in the field of hazard vulnerability science and the often very in-equitable and disproportionate pattern of disaster loss and recovery across communities.

Erick Jones
Committee Member, Hazard Mitigation and Resilience Applied Research Topics
George and Elizabeth Pickett Endowed Professor in Industrial, Manufacturing, and Systems Engineering, University of Texas Arlington; Jefferson Science Fellow, Office of the Chief Economist, U.S. Department of State

Dr. Erick C. Jones, Sr. is a George and Elizabeth Pickett Endowed Professor in Industrial, Manufacturing and Systems Engineering at the University of Texas Arlington. He is a noted engineer, researcher, and leader whose career has spanned industry, government and academia. He joins the US State Department as a Senior Advisor (Expert) in the Office of the Chief Economist through the National Academies of Science, Engineering and Medicine, Jefferson Science Fellowship focusing on Resilient Supply Chains.

Dr. Jones' industry background spanned working as an Engineer to an Executive at Fortune 500 Companies leading projects including ERP implementations, Business Process Re-engineering, and corporate merger and acquisitions. His industry experiences facilitated his success in Academia with Supply Chain Engineering and led to 4 academic textbooks, over 200 publications, 17 PHDs (7 of which are from underrepresented groups), funding from national agencies including NASA, DOT, and NSF, and tenured professorships from two Tier 1 Universities. His fundamental theories on automated inventory control, quality, and supply chain economics and logistics engineering have impacted the fields of artificial intelligence, manufacturing, and supply chain management.
Dr. Jones' servant leadership and administrative activities include leading government funded public/private multi-university research centers, funding large scale programs at the National Science Foundation as a director, initiating academic programs as a chair and dean, and fundraising as a board member on public and private foundation boards. He represents and is an advocate for diverse and equitable conditions for all.
Dr. Jones is an alumnus of Texas A&M University and Distinguished Engineering Alumni of the University of Houston, a scholar of William J. Fulbright and Alfred P. Sloan programs, and a Fellow of AAAS and the Institute of Industrial and Systems Engineering.

Panel 2: Governance Across Events: Decision Making and Policies

Panelists:

Dr. Kristen Averyt
Senior Climate Advisor, Office of Nevada Governor Steve Sisolakto
k.averyt@gov.nv.gov

Dr. Kristen Averyt currently serves as the Senior Climate Advisor in the Office of Nevada Governor Steve Sisolak where she leads climate planning and policy development for the State. She is a Research Professor at the University of Nevada Las Vegas and previously served as President of the Desert Research Institute. She holds a Ph.D. in Geological and Environmental Sciences from Stanford University and earned a Masters in Chemistry as a Fulbright Fellow in New Zealand. Her expertise covers a range of issues including climate change, water resources in the Western US, and the energy-water nexus.

Dr. Averyt has a long record connecting science with public policy. She worked in the US Senate as a NOAA Knauss Fellow and at NASEM as a Christine Mirzayan Science and Technology Policy Fellow. As a member of the IPCC Working Group I Support Unit, she was one of many scientists who shared in the 2007 Nobel Peace Prize. Of her honors, she is most proud of the Girls Scouts of the Sierra Nevada Award for Environmental Leadership. She was recently elected to the American Meteorological Society (AMS) Council, is a Senior Policy Fellow of the AMS, and engages in many other service and board activities.

Michael A. Sprayberry
Senior Advisor for Emergency Management, Hagerty Consulting
mike.sprayberry@hagertyconsulting.com

Michael (Mike) Sprayberry is a proven leader and emergency manager with a career of public service spanning over 42 years. Prior to joining Hagerty, Mike served the State of North Carolina for more than more than 15 years in various leadership roles within the state's Division of Emergency Management; eight of which he served as the Division's Director while also leading the state's Office of Recovery and Resiliency and serving as the state's Deputy Homeland Security Advisor.

Mike was appointed as the Director of North Carolina's Division of Emergency Management (NCDEM) in February 2013 after serving as the Deputy Director and Operations Section Chief since 2006. Prior to that, he served as the Division's Deputy Director and Logistics Section Chief.

During his tenure as Director, Mike successfully led the State Emergency Response Team's response and recovery efforts for 19 state declared disasters and 13 federally declared disasters, to include Hurricane Florence, now known as North Carolina's "Storm of Record." In just the last four years, Mike led North Carolina's recovery efforts from major hurricanes, winter storms, earthquakes, and the COVID-19 pandemic. As Director, he also served as vice-chair of the state's Emergency Response Commission and as a member of the state's Radiation Protection Commission. Additionally, Mike was President of the National Emergency Management Association (NEMA) from 2017-2018. In this role, Mike advocated for federal policy changes that helped progress the field of emergency management, including supporting the passage of the Disaster Recovery Reform Act of 2018 which made pre-disaster mitigation a national priority and bolstered state and local emergency management capabilities.

Moreover, under Mike's leadership, North Carolina became one of only fifteen states to achieve the Federal Emergency Management Agency's (FEMA) Enhanced State Hazard Mitigation Plan status, thereby granting the state access to millions of dollars in additional federal funding to build resiliency against future disasters and hazards. During his term, the state also achieved national reaccreditation for the emergency management program and increased the capacities of its Hazardous Materials Response program as well as its internationally renowned Search and Rescue program.

Before joining state government, Mike honorably served in the United States Marine Corps and North Carolina Army National Guard for more than 25 years.

Mike holds bachelor's and master's degrees from the University of North Carolina at Charlotte. His achievements in emergency management and beyond have been well documented and include being the recipient of two departmental Secretary's Gold Circle Awards, the North Carolina Emergency Management Association Colonel William A. Thompson Award for Outstanding Achievement in Emergency Management, the North Carolina Housing Coalition Public Official of the Year, the North Carolina Association of County Commissioners Friend of the Counties, the NEMA Presidential Citation, as well as the NEMA Lacey E. Suiter Distinguished Service Award. He is also a proud member of the North Carolina National Guard Officer Candidate School Hall of Fame.

Steven P. French, Ph.D., FAICP
Professor of City & Regional Planning, Georgia Tech
steve.french@design.gatech.edu

Dr. Steven P. French is Professor of City and Regional Planning at Georgia Institute of Technology. Dr. French's teaching and research activities focus on sustainable urban development, natural hazard risk assessment and urban information systems Dr. French has been the Principal Investigator or Co-Principal Investigator on more than seventy research projects. He is the author or co-author of more than twenty-five refereed journal articles and four books. He has served on the editorial boards of the Journal of the American Planning Association, Journal of Planning Education and Research, Journal of the Urban and Regional Information Systems Association and Earthquake Spectra. Dr. French holds a Ph.D. in City and Regional Planning from the University of North Carolina at Chapel Hill. In 1987-88, Dr. French served as the Visiting Professor of Resources Planning in the Civil Engineering Department at Stanford University. He is a Fellow of the American Institute of Certified Planners.

Moderator:

Terri McAllister
Committee Member, Hazard Mitigation and Resilience Applied Research Topics
Community Resilience Group Leader and Program Manager, National Institute of Standards and Technology

Therese McAllister is the Community Resilience Group Leader and Program Manager in the Engineering Laboratory (EL) at the National Institute of Standards and Technology (NIST). She is also the NIST Liaison for the NIST-funded Center of Excellence, Center for Risk-Based Community Resilience Planning, that is led by Colorado State University. Dr. McAllister conducts research on community resilience, with a focus on the integrated performance of physical infrastructure and social and economic systems. She has expertise in structural reliability, risk assessment, failure analysis of buildings and infrastructure systems, and the performance of structures in fire. She co-led detailed structural analyses of the WTC towers and WTC 7 for the NIST WTC Investigation, conducted reliability studies of levee systems for the USACE following Hurricane Katrina flooding in New Orleans, and evaluated Hurricane Sandy flood effects on infrastructure systems as part of the FEMA MAT. She recently was recognized with the 2021 ASCE Walter P Moore, Jr award and 2018 ASCE Ernest E Howard Award for her research on structural codes and standards and on resilience. Dr. McAllister is an ASCE Structural Engineering Institute Fellow and serves on the ASCE/SEI 7 standard committee, Infrastructure Resilience Division, the Technical Council on Life-Cycle Performance, Safety, Reliability and Risk of Structural Systems, and the SEI Board Level Resilience Committee. She previously served on the International Code Council (ICC) Structural Committee. She is an advisory panel member for NIBS, DHS and HUD resilience activities. She has a PhD and MS in Civil/Structural Engineering from Johns Hopkins University, an MS in Civil/Ocean Engineering from Oregon State University, and a BS in Ocean Engineering from Florida Atlantic University.

Keynote

Susan Cutter
Carolina Distinguished Professor, Director of the Hazards Vulnerability & Resilience Institute, University of South Carolina
SCUTTER@mailbox.sc.edu

Dr. Susan Cutter is a Carolina Distinguished Professor of Geography at the University of South Carolina where she directs the Hazards and Vulnerability Research Institute. She received her B.A. from California State University, East Bay and her M.A. and Ph.D. (1976) from the University of Chicago. Her primary research interests are in the area of disaster vulnerability/resilience science and how vulnerability and resilience are measured, monitored, and assessed. She has authored or edited fourteen books, the most recent published by Cambridge University Press, Hurricane Katrina and the Forgotten Coast of Mississippi, more than 150 peer-reviewed articles and book chapters. Dr. Cutter has mentored more than 50 masters and doctoral students.

Dr. Cutter has led field teams to study long term recovery from Hurricane Katrina (2005), Hurricane Sandy (2012), the October 2015 South Carolina floods, and Hurricane Matthew (2016). She has provided expert testimony to Congress on hazards and vulnerability, was a member of the US Army Corps of Engineers IPET team evaluating the social impacts of the New Orleans and Southeast Louisiana Hurricane Protection System in response to Hurricane Katrina, and was a juror for the Rebuild by Design competition for Hurricane Sandy reconstruction. Her policy-relevant work focuses on emergency management and disaster recovery at local, state, national, and international levels, with funding from NSF, the US Army Corps of Engineers, NOAA, NASA, USGS, FEMA, DHS, South Carolina's Emergency Management Division (EMD) and State Law Enforcement Division (SLED), and Florida's Department of Health.

Dr. Cutter serves on many national advisory boards and committees including those of National Research Council (NRC), the National Science Foundation (NSF), and National Institute of Standards and Technology (NIST). She chaired the US National Academies committee that authored the 2012 seminal report, Disaster Resilience: A National Imperative. She is a member of the Research Advisory Group for UK DFID, and served as Vice-Chair of the Integrated Research on Disaster Risk (IRDR) Science Committee, an international advisory board sponsored by the International Council for Science (ICSU) and the United Nations Office for Disaster Risk Reduction (UNISDR). Dr. Cutter serves as co-executive editor of Environment, associate editor of Weather, Climate, and Society, member of the Advisory Board of the Journal of Extreme Events and is an editorial board member for Natural Hazards, Annals of the AAG, and International Journal of Disaster Risk Reduction. She is also serving as the Editor-in-Chief for the Oxford Research Encyclopedias Natural Hazard Science.

Dr. Cutter is an elected Fellow of the American Association for the Advancement of Science (AAAS) (1999). She is also past President of the Association of American Geographers (2000), and past President of the Consortium of Social Science Associations (COSSA) (2008). Dr. Cutter held the MunichRe Foundation Chair (2009-2012) on Social Vulnerability through the United Nations University-Institute for Environment and Human Security, in Bonn, Germany. In 2006, Dr. Cutter received the

Decade of Behavior Research Award given by a multidisciplinary consortium of more than 50 national and international scientific organizations in the social and behavioral sciences. In 2010, Dr. Cutter received the Lifetime Achievement Award from the Association of American Geographers, its highest honors. And in 2015 was awarded an honorary doctorate from the Norwegian University of Science and Technology in Trondheim, Norway and was also elected as a foreign member of the Royal Norwegian Society of Sciences and Letters.

Panel 3: Mitigating Impacts: Developing Solutions and Avoiding Unintended Consequences

Panelists:

A.R. Siders
Assistant Professor, Disaster Research Center, University of Delaware
siders@udel.edu

A.R. Siders is an assistant professor at the University of Delaware in the Disaster Research Center, the Biden School of Public Policy and Administration, and the department of Geography and Spatial Sciences in the College of Earth, Ocean, and Environment. She holds a JD from Harvard Law School and a PhD from the Emmett Interdisciplinary Program in Environment and Resources at Stanford University. Siders previously served as an environmental fellow at the Harvard University Center for the Environment, a legal fellow at the Sabin Center for Climate Change Law at Columbia University, and a Presidential Management Fellow with the U.S. Navy. Her research focuses on climate change adaptation decision-making and evaluation: how and why communities decide when, where, and how to adapt to the effects of climate change and how these decisions and decision-making processes affect outcomes such as risk reduction and equity. Her current projects focus on adaptive capacity, managed retreat, and adaptation equity. She believes adaptation is opportunity and that we should be ambitious, if not audacious, in dreaming of and planning for a better future.

Hussam Mahmoud
George T. Abell Professor of Infrastructure, Colorado State University
Hussam.Mahmoud@colostate.edu

Dr. Mahmoud is the George T. Abell Professor in Infrastructure in the Department of Civil and Environmental Engineering at Colorado State University (CSU) and is the director of the Structural Laboratory. He obtained his BSc and MSc in civil engineering from the University of Minnesota and his Ph.D. from the University of Illinois at Urbana-Champaign (UIUC). Prior to pursuing his Ph.D., he was the manager of the NEES Earthquake Laboratory at the UIUC. Prior to arriving at UIUC, he was a research scientist at Lehigh University working on assessment and repair of deteriorated infrastructure. Dr. Mahmoud's research program has three major thrusts including assessing community resilience and recovery of infrastructure and socio-economic institutions following extreme events with a focus on climate-driven hazards, quantifying building damage to extreme single and multiple hazards, and evaluating deteriorated infrastructure such as bridges and underwater systems. He has authored over 250 publications and has given more than 100 presentations including 70 invited talks at national and international conferences. He has chaired and served on numerous technical committees, including the

ASCE Committees on fire protection and on Multi-hazard Mitigation. His research has received media coverage through citations and interviews in numerous venues, including Nature Climate Change, Smithsonian Magazine, the Independent, Business Insider, and CNN.

Joshua DeFlorio, AICP, LEED AP
Chief, Resilience & Sustainability/Port Authority of New York & New Jersey
jdeflorio@panynj.gov

Josh DeFlorio, AICP, LEED AP, is Chief, Resilience and Sustainability at the Port Authority of New York and New Jersey (PANYNJ). He leads a team that focuses on ensuring that the aviation, port, urban rail, tunnel, bridge, terminal, and real estate facilities called for in the agency's capital plan are designed and delivered to be both environmentally sustainable and climate resilient.

Prior to joining PANYNJ, he was national Practice Lead for Risk and Resilience at Cambridge Systematics and served as a Senior Project Manager in the NYC Economic Development Corporation's Ports & Transportation group. He is a Chapter Author on the 5th National Climate Assessment and serves as a member of the New Jersey Inter-Agency Council on Climate Resilience, created by Governor Murphy.

Moderators:

Elena Krieger
Committee Member, Hazard Mitigation and Resilience Applied Research Topics
Director of Research Physicians, Scientists, and Engineers for Healthy Energy

Elena Krieger is the Director of Research at the energy science and policy research institute Physicians, Scientists, and Engineers for Healthy Energy (PSE). She joined PSE in 2013 to launch the organization's clean energy practice area, and now oversees its scientific research efforts. Her current work focuses on accelerating the transition to clean energy resources, and developing transition pathways that realize non-energy co-benefits. She serves as principal investigator on numerous research projects, and simultaneously works closely with community organizations, non-profits, policymakers, and other stakeholders to use science to inform energy and climate policy. Her current research areas include designing solar+storage resilience hubs and deployment strategies, and integration of resilience, health, equity, and environmental metrics into state-level deep decarbonization efforts. She is a member of the Disadvantaged Communities Advisory Group to the California Energy Commission and the California Public Utilities Commission, a member of the National Academies' New Voices in Science, Engineering and Medicine Program 2021 Cohort, and a science advisor to the American Resilience Project. She received her PhD in Mechanical & Aerospace Engineering from Princeton, where her research focused on optimizing energy storage in renewable systems, and holds an AB in Physics and Astronomy & Astrophysics from Harvard.

Adam Rose
Committee Member, Research Professor, Department of Public Policy; Senior Research Fellow, Center for Risk and Economic Analysis of Threats and Emergencies (CREATE), University of Southern California

Adam Rose is a Research Professor in the University of Southern California Sol Price School of Public Policy, and Research Fellow in USC's Center for Risk and Economic Analysis of Terrorism Events (CREATE). He obtained his Ph.D. in Economics from Cornell University. Professor Rose's primary research interest is the economics of disasters. He has spearheaded the development of CREATE's comprehensive economic consequence analysis framework and has done pioneering research on resilience at the level of the individual business/household, market/industry and regional/national economy. He is currently the PI on an NSF grant on advanced computational methods to improve reliability and resilience of interdependent systems and a contract with the Critical Infrastructure Resilience Institute to measure static economic the cost-effectiveness of individual resilience tactics. Professor Rose is the author of several books and over 250 refereed professional papers. He has served as the American Economic Association Representative to the American Association for the Advancement of Science and as a member of the Board of Directors of the National Institute of Building Sciences Multi-Hazard Mitigation Council. He is the recipient of several honors and awards, including, among others, the Distinguished Research from the International Society for Integrated Risk Management, a Woodrow Wilson Fellowship, East-West Center Fellowship, American Planning Association Outstanding Program Planning Honor Award, and Applied Technology Council Outstanding Achievement Award. He is also an elected Fellow of the Regional Science Association International. Professor Rose has served on NAS Panels on Earthquake Resilience and on Seismic Warning.

Panel 4: Strategies to Effectively Apply Solutions

Panelists:

Christopher Zobel
R.B. Pamplin Professor of Business Information Technology, Pamplin College of Business, Virginia Tech
czobel@vt.edu

Christopher W. Zobel is the R.B. Pamplin Professor of Business Information Technology in the Pamplin College of Business at Virginia Tech. He earned a Ph.D. in Systems Engineering from the University of Virginia, an M.S. in Mathematics from the University of North Carolina at Chapel Hill, and a B.A. in Mathematics from Colgate University. Dr. Zobel's primary research interests include disaster operations management and humanitarian supply chain resilience. He has published over 100 articles in archival journals and academic conference proceedings, and his work can be found in journal outlets such as the *Journal of Operations Management*, *Production and Operations Management*, *Risk Analysis*, *Decision Sciences*, and the *European Journal of Operational Research*. He is currently Co-PI on several different US National Science Foundation grants that involve characterizing and quantifying multi-dimensional disaster resilience. Dr. Zobel is also one of the founding faculty members of the NSF NRT graduate program on Disaster Resilience and Risk Management, which is located within the Center for Coastal Studies at Virginia Tech.

Gabrielle Brazzil
Senior Equity Practitioner, Co-Founder, Equity Center of Excellence, WSP
Gabi.Brazzil@wsp.com

Gabi Brazzil is a senior equity practitioner, project manager, and co-founder of the WSP Equity Center of Excellence with WSP, a global engineering consulting firm. She specializes in equity services for public projects, supporting public agencies to develop operational and cultural practices to adopt and sustain equity, and project delivery services to guide equity goals and outcomes. Gabi's experience spans transportation, housing, and water projects through work with Bay Area Rapid Transit (BART), Caltrans, Southern California Area Council of Governments (SCAG), and city departments of public works and power and water nationally. Gabi trains and collaborates with technical experts and decision makers to integrate equity into funding prioritization, data analysis, scenario development, and public engagement. In 2021, Gabi was honored with the Emerging Leader of the Year Award from the professional organization the Conference of Minority Transportation Officials (COMTO). She is Vice President of the Northern California chapter of COMTO, advancing opportunities for people of color in the industry and awarding scholarships to underrepresented students to usher in new, representative talent. She also serves as Equity Chair on the Transport Oakland board, a policy advocacy organization in her home base of Oakland, California.

Lisa Churchill, PG
Principal, Climate Advisory
lisa@climateadvisoryllc.com

Lisa Churchill, PG, is a climate change expert and founder of Climate Advisory, a certified WBE that focuses on climate risk and resilience strategies. Lisa has 25 years of experience in the engineering and architectural field and deep expertise in leading climate resilience initiatives for public and private sector clients. She has worked with numerous municipalities, ranging from larger urban areas such as Washington DC and Boston, MA, and large asset owners and operators (MBTA, Logan International Airport, Mass General Brigham), private clients (REITs and tech companies) as well as smaller communities and non-profits. She has presented on climate at a Congressional Briefing and the Pentagon, taught classes at MIT and University of New Hampshire, is a regular contributor to industry-leading research and an invited speaker at national and international forums on climate resilience. Her training as a paleontologist, with a focus on mass extinctions, has given her a unique perspective on the characteristics of resilient systems. Lisa is also a co-editor of the recently released book: Climate Change and the Built Environment, published in 2022 by ACEC, which outlines key trends and emerging innovations within this field.

Dr. Shanna McClain
Disasters Program Manager, NASA Applied Sciences
shanna.n.mcclain@nasa.gov

Dr. Shanna N. McClain is the Disasters Program Manager for NASA's Applied Sciences Division. She also manages NASA's Global Partnerships portfolio and the Socioeconomic Assessments Initiative. Prior to working at NASA, Shanna worked as a Visiting Scientist with the Environmental Law Institute on issues

relating to environmental migration and displacement and environmental conflict and peacebuilding. She also worked for the joint UNOCHA/UN Environmental Emergencies Section on issues relating to complex, cascading, and protracted disasters and crisis. Shanna holds a PhD in Environmental Science and Policy from Southern Illinois University where her research focused on the integration of climate change adaptation, disaster preparedness and response, and resilience into multilevel governance frameworks of international river basins.

Moderator:

Stacy Swann

Committee Member, Hazard Mitigation and Resilience Applied Research Topics
CEO, Climate Finance Advisors, BLLC

Stacy Swann is the CEO and Founding Partner of Climate Finance Advisors, a benefit LLC based in Washington, DC with expertise in banking, development finance, and climate change. During her career, Ms. Swann has held senior positions with the International Finance Corporation (IFC), as well as with the US Department of Treasury, Enron Corporation, and other organizations. For more than twenty five years she has worked with investors, financial institutions and policymakers on mainstreaming climate considerations across both investment and policy and has particular expertise in blended finance, climate finance, climate-smart fiscal policies, and approaches to identify, assess and manage climate risk.

In addition to leading Climate Finance Advisors, Ms. Swann is currently the Chair of the Export-Import Bank of the United States (EXIM) Chair's Council on Climate Change, a sub-committee of its Advsiory Board. She also sits on the Board for the Montgomery County Green Bank the United States' first county-level green bank and is Chair of its Investment Committee. She is a member of the Steering Committee/Board of the Global Water Partnership, a global action network of more than 3,000 Partner bodies in 179 countries focused on building sustainable water systems globally. Stacy holds an MBA in Finance and Development Economics from American University, a Master's degree from Harvard University and a Bachelors degree from City University of New York - Hunter College.