



Critical Challenges & Funding Opportunities in Infrastructure Systems, Smart Communities, and Disasters for Climate Change Adaption

Friday • November 22, 2024 • 2:00 until 3:00 PM EST • 405 John D. Tickle Building

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Dr. Daan Liang

Director for NSF's Humans, Disasters, and Built Environment Program



Driven by a changing climate, the frequency and force of extreme events such as storms, wildfires, floods, droughts, and heat waves are increasing and new diseases are emerging. At the same time, much of the nation's critical infrastructure is well beyond its service life while more people choose to live in places susceptible to natural hazards. This complex and compounding interaction of engineering, social, environmental, and climatic processes plays out over large spatial and temporal scales but remains poorly understood. In this talk, Dr. Daan Liang begins with an overview of fundamental research supported by his core Humans, Disaster, and Built Environment program. Next, he presents program portfolios, funding mechanisms, and past awards and outlines cross-cutting opportunities such as Smart and Connected Communities, and Civic Innovation Challenge. Dr. Liang encourages original and innovative ideas, whether they advance intellectual frontiers or effect positive changes in communities.

Dr. Daan Liang is the Program Director for the Humans, Disasters, and Built Environment program at the National Science Foundation. The program supports fundamental, multidisciplinary research on the interactions between humans and the built environment within and among communities exposed to natural, technological, and other types of hazards and disasters. His portfolio includes cross-cutting disaster-related solicitations and DCLs such as Smart and Connected Communities, the CIVIC Innovation Challenge, and Innovative and Inclusive Wildland Fire Science. Dr. Liang represents the NSF on interagency working groups for the National Windstorm Impact Reduction Program, Subcommittee on Resilience Science and Technology, and Science for Disaster Reduction. Dr. Liang an ex officio member of the National Academies' Roundtable on Risk and Resilience of Extreme Events (also known as the 'Resilient America Roundtable'). In 2023, he assisted US Embassy Singapore on disaster resilience and Critical and Emerging Technology issues as an Embassy Science Fellow. Prior to his NSF IPA assignment, Dr. Liang was a Professor in the Department of Civil, Construction, and Environmental Engineering and the Director of Center for Sustainable Infrastructure at the University of Alabama. His research interests include wind damage assessment, recovery, and mitigation, community resilience to natural hazards, risk transfer and hedging, and construction engineering. He has been supported by grants and contracts from the National Science Foundation, U.S. Department of Energy, U.S. Department of Commerce, National Institute of Standards and Technology, Texas Department of Transportation, private industry, and charitable foundation. Dr. Liang co-founded and co-directed an NSF Industry-University Cooperative Research Center on Wind Hazard and Infrastructure Performance. He held various academic and administrative positions at Texas Tech University.



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