



Dr. Elise Miller-Hooks

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Infrastructure Systems Resilience: Models and Algorithms

Friday, November 15, 2019, 11:00 am

Location: FNGR 420

Abstract

This talk will describe developed mathematical and algorithmic approaches for quantifying and maximizing the resilience of infrastructure systems and the societal functions they support. This talk will focus on surface transportation systems; however, transportation networks are interconnected with other critical lifelines, such as power and water supply. Together, these lifelines sustain societal activities occurring, for example, within building facilities related by a common function such as health care. Moreover, the abilities of system users, e.g. transit riders, play an important role in the services they experience. Thus, both the behavior of technical components and how the system enables its varying users to adapt are crucial. These considerations are incorporated and resilience is discussed in the context of our current environment and in a developing intelligent and connected world.

Biography

Dr. Elise Miller-Hooks holds the Bill and Eleanor Hazel Endowed Chair in Infrastructure Engineering in at George Mason University. Prior to this appointment, Dr. Miller-Hooks served as Program Director of the National Science Foundation (NSF) Civil Infrastructure Systems Program and lead Program Officer for the Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP) solicitation (2014-16). She served on the faculties of the University of Maryland, Pennsylvania State University and Duke University. Dr. Miller-Hooks received her Ph.D. (1997) and M.S. (1994) degrees in Civil Engineering from the University of Texas - Austin and B.S. in Civil Engineering from Lafayette College (1992). She has expertise in: disruption planning and response; multi-hazard civil infrastructure resilience quantification and protection; stochastic and dynamic network algorithms; transportation systems engineering; intermodal passenger and freight transport; real-time routing and fleet management, including paratransit, ridesharing and bikeways; and collaborative and multi-objective decision-making.

Hosted by Drs. Payman Dehghanian and Miguel Lejeune