

IISE Transactions Webinar

Tuesday, Nov 29, 2022 | 9-10 a.m. US CT (10-11 a.m. ET)

Zoom Meeting ID: 965 7179 8151, Passcode: 573995

Constructs in Infrastructure Resilience Framing

This talk describes five constructs for framing infrastructure resilience estimation. These constructs range from the consideration of a single component to a community service provided through a set of buildings whose functionality relies on interdependent supporting lifelines. A key aim is to explore how the construct that is adopted affects resilience understanding. It discusses the value of reframing the resilience computation around services that are provided by built environments rather than around the built systems themselves. The built environment would provide little in the way of services if not for human involvement and other needed resources. A construct for framing resilience is expanded to incorporate the role of humans as infrastructure, as well as permanent and consumable limiting resources, in creating service capacity. Taking a service-based viewpoint induces a change in perspective with rippling impact. It affects the choice of metrics for measuring resilience, adaptation strategies to include in assessment, baselines for comparison, and elements of the built environment to incorporate in the evaluation. It necessitates consideration of socio-technical concerns. It also brings hidden issues of inequity to the foreground. This article suggests that underlying many resilience studies is an implicit construct for framing resilience, and explores how the construct affects and enables resilience understanding. This webinar is based on an *IISE Transactions* [perspective paper of the same title](#).

Speaker



Elise Miller-Hooks holds the Bill and Eleanor Hazel Endowed Chair in Infrastructure Engineering at George Mason University, is an advisor to the World Bank Group, and is founding Editor-in-Chief of IFORS/Elsevier's Sustainability Analytics and Modeling journal. Dr. Miller-Hooks previously served as a program director at the U.S. National Science Foundation and on the faculties of the University of Maryland, Pennsylvania State University and Duke University. Dr. Miller-Hooks received her PhD in civil engineering from the University of Texas – Austin and BS in civil engineering from Lafayette College. She has expertise in: multi-hazard civil infrastructure resilience quantification and protection; disruption planning and response; transportation systems engineering; sustainability; intermodal rail- and maritime-based freight transport; real-time routing and fleet management: paratransit, delivery, ridesharing and bikeways; stochastic and dynamic network algorithms; and collaborative and multi-objective decision-making.

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