

"Optimal Strategies for Enhancing Healthcare System Resilience Subjected to Seismic Events" presented by Emad M. Hassan

Monday, November 11, 2024

3:30 - 4:30 PM

125 Butler-Carlton or

Zoom



Abstract: Natural hazards, particularly earthquakes, disproportionately impact built environments and communities. Comprehending the effects on critical facilities like hospitals proves challenging due to the complex nature of their operational dynamics. As a result, many unanswered questions remain regarding the impact of extreme events on the functionality of healthcare systems and the effectiveness of various strategies in improving healthcare resilience. In this talk, I will discuss a newly developed healthcare system resilience framework and its utility in understanding healthcare functionality under seismic events. The framework is centered around integrating physical system behavior with social and human dimensions in a network setting to quantify damage, recovery, and resilience of interconnected healthcare facilities. The discussion extends to introducing and evaluating various mitigation strategies, along with estimating optimal resource allocations to enhance hospital functionality subjected to major seismic events.

Bionote: Dr. Emad Hassan is an assistant professor at Missouri S&T. Dr. Hassan's research explores fundamental questions related to the impacts of natural hazards on the built environment, infrastructure resilience, and disaster mitigation. His work uses multiple methods, including experimental and analytical simulations, socio-technical models, network analysis, and machine learning. Prior to joining Missouri S&T, he served as a research scientist at Colorado State University. He has been involved in various projects funded by national and international agencies. Dr. Hassan earned bachelor's and master's degrees from Cairo University and completed his Ph.D. at Colorado State University. Before joining Academia, he worked as a structural design engineer in Cairo, Egypt, from 2012-2015.



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