



TEXAS A&M UNIVERSITY

Zachry Department of Civil & Environmental Engineering

The Ethel Ashworth-Tsutsui Memorial Lecture and Awards hosted by Women in Science and Engineering (WISE) in conjunction with Construction, Geotechnical and Structural Engineering CVEN 681 Seminar

Friday, February 9, 2024 | 1:50 – 2:40 p.m. CST, Haynes Engineering Building Rm 110

Potential for achieving post-disaster functional recovery for existing buildings

Abstract

Historically, the development of building practices, codes, and standards has focused on reducing risks to life safety and we generally see low loss of life due to failures of building infrastructure. Nevertheless, these failures have major impacts on communities due to the disruption of building function that brings in turn significant disruption to the activity, economy, well-being, and sense of community. This loss of function can also contribute indirectly to loss of life (e.g., generator-related deaths after hurricanes). This presentation describes a study that focuses on functional recovery assessment of existing buildings and explores opportunities to improve post-disaster building function through seismic retrofit. Any community resilience effort must address existing buildings in addition to new buildings given that existing buildings represent a large portion of the building stock. This study demonstrates some of the key opportunities and challenges related to upgrading existing buildings to meet these goals for earthquakes.



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Dr. Koliou is an Associate Professor at the Zachry Department of Civil and Environmental Engineering (CEE) at Texas A&M University. Her research contributions focus on developing Resilient and Sustainable Structures and Communities against extreme events to safely and functionally accommodate growing populations in urban areas. Her work includes system-level and community-level simulations that analyze the performance of structures and communities to extreme events. She is developing novel resilient structural designs and systems against various

natural hazards and formulating fundamental mathematical frameworks to assess risk-based system functionality and community resilience. Dr. Koliou has received over \$3 million in external research funding from federal, state, and private sources, and she is currently leading a multi-institution NSF project on the Gulf Resilience Coastlines and People Focused Research Hub focusing on the recovery of tribal communities in the Gulf region.

Dr. Koliou received the 2018 Structural Engineering Institute's Young Professional Scholarship, 2021 Research Impact Award by the Department of CEE at Texas A&M, 2021 Engineering Genesis Award for multi-disciplinary research by the Texas A&M College of Engineering, and the 2021 NSF CAREER award. She has very recently been selected as one of the NSF and Kaleta A. Doolin Foundation Ocean Decade Champions.



Recipients of the Ethel Ashworth-Tsutsui Memorial Awards will be recognized during the Seminar. These awards are given to honor the memory of Ethel Ashworth-Tsutsui, a founding member of Women in Science and Engineering and a leader in enhancing women's presence in science and technology fields. The Ethel Ashworth-Tsutsui Award for Mentoring was established to recognize graduate students, postdoctoral researchers, and research staff who take action to encourage and support graduate students. The Ethel Ashworth-Tsutsui Award for Research was established to recognize graduate students who have demonstrated excellence in research.