PLEASE ANNOUNCE TO ALL EECE CLASSES
Department of Electrical and Computer Engineering
Colloquium Announcement
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2:00p.m., Tuesday, September 23, 2014, Olin Engineering 202

Performance-Based Engineering: Opportunities for Integrating Science, Engineering and Policy

Dr. Ting Lin, Assistant Professor
Civil, Construction and Environmental Engineering
Marquette University

Abstract:
Science is curiosity driven; engineering, solution seeking; policy, action oriented. Performance-based engineering connects the complexity of science to the practicality of engineering and policy. It estimates site- and system-specific hazard and response to aid decision making. Successfully implemented in earthquake engineering and adopted in other fields, performance-based engineering has demonstrated a growing influence in research and practice.

This talk presents a framework to model earthquake impact on infrastructure via rupture to rafters to response (R³) in order to reduce risk and increase resilience, which contributes to the research group’s long-term goal of improving system reliability and sustainability under multiple hazards in the face of climate change (HazSus). R³ brings scientific breakthroughs in geophysics and structural engineering, along with technological advances in high performance computing and visualization, to showcase the potential of earthquake engineering that is beyond its original boundaries and opens up conversations for an all-hazards investigation, HazSus, which encompasses earth science, engineering, and policy. Recent (a) advancement in hazard-consistent ground motion selection methodology, (b) progress in ground motion simulation validation of tall buildings, (c) utilization of high performance computing in hazard characterization and response assessment, (d) experiment on visualizing emergency response under extreme motions, and (e) pilot study on probabilistic sea-level rise hazard analysis jumpstart this pursuit with a major focus on earthquake hazard that leads towards multi-hazard sustainability.

Biography:
Ting Lin directs the Multi-Hazard Sustainability (HazSus) Research Group that focuses on resilient and sustainable infrastructures, earthquake engineering, and climate change. She completed her Ph.D. and M.S. in Structural Engineering from Stanford University, and B.S. (Hons.) in Civil Engineering and a concentration in Architecture from Cornell University. Prior to joining Stanford, she worked on lifeline research at Cornell, and structural design at Leslie E. Robertson Associates. Lin is a corresponding author for the journal paper that won the 2011 Outstanding Paper Award from Earthquake Engineering Research Institute (EERI). She is a member of the Ground Motion Simulation Validation (GMSV) Technical Activity Group (TAG) in the Southern California Earthquake Center (SCEC).

RECEPTION AND REFRESHMENTS AT 1:30 P.M., OLIN ROOM 204A