



## RISK AND RESILIENT ASSESSMENT OF INFRASTRUCTURE SYSTEM

~ by ~

JI YUN LEE

Department of Civil and Environmental Engineering, WSU

Tuesday, April 5 • 11:00 AM – Noon (PT) • **TEAMS ONLY**

[\(Click here to join meeting\)](#)

### OVERVIEW

---

Public awareness of civil infrastructure system performance and resilience has increased dramatically in recent years as a result of repeated natural disasters with high consequences. In response to increased public concern, a significant amount of research has been done to advance risk management strategies that can effectively improve system resilience. While civil infrastructure systems are continually subjected to multiple evolving conditions and environments during their lifetime, customary risk assessment tools have primarily focused on understanding current risks to systems and may not explicitly incorporate dynamic risk components resulting from structural aging and deterioration, climate change effects, increasing operational demands, etc. This may lead to the underestimation of risk and make infrastructure systems poorly prepared and responsive to potential hazards.

This talk will address several key issues in the course of risk and resilient assessment of infrastructure systems. First, the talk will introduce a general procedure for engineering risk and resilient assessment. Then, new approaches will be presented as a way of combining the effects of multiple evolving risks and opportunities on large-scale system performance over its planning horizon. Finally, several examples (e.g., supply chain networks, transportation systems, residential communities) will be introduced to illustrate how the new approaches can be applied to large-scale systems.

### BIO

---

**Dr. Ji Yun Lee** is an Assistant Professor in the Department of Civil and Environmental Engineering (CEE) at Washington State University (WSU). Prior to joining WSU in 2017, Dr. Lee served as a Postdoctoral Scholar at UCLA (2016 - 2017) and as a Visiting Faculty at the University of Central Florida (2015 - 2016). She holds a Ph.D. (2015) in Civil Engineering from Georgia Tech, a M.S. (2011) in Civil Engineering from Stanford University, and a B.S. (2009) in Architectural Engineering from Korea University, South Korea. Dr. Lee's research experience and interests lie in the general field of risk-informed decision-making for civil infrastructure performance and integrity, with specific interests ranging from stochastic models of natural hazards to structural reliability and risk assessment, optimization, human decision-making, and infrastructure/community resilience. She is a Historian of the ASCE 7-22 Load Combinations Subcommittee and a Member of the ASCE Infrastructure Resilience Division, Task Group 2 (Reliability-Based Structural System Performance Indicator), and Task Group 3 (Risk Assessment of Structural Infrastructure Facilities and Risk-Based Decision Making).

