



The CvEEN
Distinguished Seminar
Series presents

MAJID MANZARI

"On the Role of Validation in Accelerating Innovation: A Geotechnical Earthquake Engineering Perspective"

18 April 2025

12:00 PM - 1:00 PM*

Layton Auditorium (MCE 1001)

*Sandwiches and beverages will be served at 11:30 AM

ABSTRACT

Over the past seven decades, there have been significant advances in understanding the performance of civil infrastructure during natural hazards such as earthquakes, hurricanes, and tsunamis. Along with a deeper understanding of materials and system performance, recent decades have seen major theoretical and computational developments. Today, practitioners use advanced computational tools to analyze design alternatives for new developments and assess the potential performance of existing infrastructure in future events. However, the capabilities, limitations, and validity of these tools are often not fully evaluated. In this presentation, we will review 14 years of collaborative research involving over 24 universities, research institutions, and civil engineering companies to assess the validity of state-of-the-art techniques for analyzing geo-structural systems during earthquakes. The role of validation in accelerating the development of innovative solutions will also be discussed.

BIO

Majid Manzari is a professor of Civil and Environmental Engineering at the George Washington University, where he currently serves as department chair. With a background in engineering mechanics and geomechanics, his research is focused on leveraging experimental observations at both the element and system levels to develop constitutive and numerical modeling platforms that accurately simulate the response of geo-structural systems. Over the past 14 years, he has led an international research collaboration using soil element testing and centrifuge modeling to validate state-of-the-art constitutive and numerical modeling techniques for analyzing soil liquefaction and its impact on the seismic performance of geo-structural systems. Majid has chaired the ASCE Engineering Mechanics Institute's technical committee on Inelastic Behavior and Multiscale Modeling, as well as the ASCE Geotechnical Institute's committee on Soil Dynamics and Earthquake Engineering. He earned his PhD in Civil Engineering from the University of California at Davis and completed his undergraduate and master's degrees at Tehran University.

