Civil and Environmental Engineering Seminar

The Sonny Astani Department of Civil & Environmental Engineering presents

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Date: Thursday, October 03rd, 2024
Time: 2 PM – 3 PM
Place: KAP 209

"Urban Engineering: New Strategies for a Resilient and Sustainable Future"

Abstract: A confluence of opportunities and national and international grand challenges are influencing current directions in the design of urban regions as populations expand. This presentation will summarize new developments to create resilient and sustainable cities through research on the built environment across several themes. Research on resilience highlights the development of structural systems that are able to be returned to use quickly after extreme events. Sustainable engineering, in turn, highlights research on strategies for developing new structural systems that greatly decrease the amount of energy, material waste, pollution, and greenhouse gas emissions in construction and use of buildings and other structures. Urban engineering summarizes approaches for conducting regional simulations to predict the impacts and opportunities across urban regions that are designed with more sustainable and resilient civil engineering solutions. By directly addressing resilience and sustainability in structural design and regional assessment, this work offers insights into how engineering innovations can be used to create a new generation of solutions for urban regions.

Bio: Jerome F. Hajjar is the CDM Smith Professor, University Distinguished Professor, and Department Chair in the Department of Civil and Environmental Engineering at Northeastern University. He is also the Director of the Laboratory for Structural Testing of Resilient and Sustainable Systems (STReSS Laboratory). He has served as Chair of the Structures Faculty and Deputy Director of the Mid-America Earthquake Center at the University of Illinois at Urbana-Champaign; was a faculty member at the University of Minnesota; and was a structural engineer and Associate at Skidmore, Owings & Merrill. His research and teaching interests include analysis, experimental testing, and design of steel and composite steel/concrete building and bridge structures, regional modeling and assessment of infrastructure systems, and earthquake engineering, and he has published over 300 papers and edited five books on these topics. Dr. Hajjar serves on the American Institute of Steel Construction (AISC) Committee on Specifications and several of its task committees, including chairing Task Committee 5 on Composite Design and the AISC Sustainability Committee. He is the Past President of the American Society of Civil Engineers (ASCE) Structural Engineering Institute (SEI) and has served on the SEI Board of Governors and several other ASCE and SEI committees, including serving as the past-chair of the ASCE Department Heads Coordinating Council and as

the ASCE Minnesota Section President. Dr. Hajjar was elected as a member of the National Academy of Engineering in 2022, was made a Fellow of ASCE in 2007 and of SEI in 2013, and was awarded the 2024 Structural Stability Research Council Lynn S. Beedle Award for Lifetime Achievement, the 2024 and 2004 AISC Special Achievement Awards, 2023 ASCE Thomas A. Lenox Excellence in Civil Engineering Education Award, the 2021 AISC Lifetime Achievement Award, the 2016 ASCE Moisseiff Award, the 2010 Popular Mechanics Breakthrough Award, the 2009 ASCE Shortridge Hardesty Award, the 2005 AISC T. R. Higgins Lectureship Award, the 2003 ASCE Walter L. Huber Civil Engineering Research Prize, and the 2000 ASCE Norman Medal for his research on steel structures, composite construction, structural stability, and earthquake engineering. Dr. Hajjar is a registered professional engineer in Illinois and Minnesota.