Ira A. Fulton Schools of Engineering
School of Sustainable Engineering and the Built Environment

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Tuesday, Sept. 29, 2020, 5:00-6:00 pm
https://asu.zoom.us/j/93892863315

The Future of Transportation Engineering

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About the Speaker

Professor Al-Qadi, Bliss Professor of Engineering at the University of Illinois at Urbana-Champaign, is the Director of the Advanced Transportation Research and Engineering Laboratory (ATREL), founding Director of the Illinois Center for Transportation (ICT), and founding Director of the Smart Transportation Infrastructure Initiative. Prior to that, he was the Charles E. Via, Jr. Professor at Virginia Tech. A registered professional engineer, Al-Qadi has authored/coauthored more than 750 publications and has delivered more than 700 presentations, including numerous keynote and distinguished lectures. He has led more than 130 research projects, with funding in excess of $150M, to completion. He has managed more than 50 projects annually in his capacity as Director of ICT since 2006.

Professor Al-Qadi has received numerous prestigious national and international honors and awards, including the NSF Young Investigator Award, the quadrennial IGS Award, ASCE James Laurel Prize, ARTBA Steinberg Award, ASCE Turner Award, TRR of the National Academies D. Grant Mickle Award, French Limoges Medal, and several other teaching and research awards.

About the Talk

Growth in population and rapid urbanization has caused an increase in e-commerce, economy, and mobility of goods and people that surpasses the capacity of the existing infrastructure due to the limited expansion of the transportation network as well as limited capital investment in mobility. Additionally, mobility options influence employment opportunities, safe travel, and economic prosperity. The current mobility challenges demand innovative solutions and collaborative efforts to meet the overarching goal of efficient, sustainable, resilient, and safe mobility. The future of transportation engineering must be holistically planned. In this presentation, the current status and future of pavement engineering and its relationship to autonomous and connected vehicles, truck platooning, 3D mobility, and Hyperloop will be discussed. In addition, sustainable transportation is vital to ensure a future that preserves all three aspects of the triple bottom line: environment, economy, and society. The transportation sector is responsible for approximately 29% of total energy consumption in the US and 14% of global greenhouse gas emissions. While the majority of these environmental impacts are emitted from vehicles, infrastructure also plays a large role in the environmental footprint of the transportation sector, with direct implications on the vehicles traversing it. Thus, the pursuit of a sustainable pavement system requires a life-cycle approach, where each life-cycle stage can be defined, evaluated, and optimized with respect to its engineering durability and environmental impacts.