

2016 - 2017

**DISTINGUISHED
SPEAKER SERIES**



DR. PITU B. MIRCHANDANI

Dr. Pitu B. Mirchandani [UCLA, BS/MS in Engineering; MIT, SM (Aero and Astro) ScD in Operations Research] is a Professor of Computing, Informatics, and Decision Systems Engineering at Arizona State University where he holds the AVNET Chair for Supply Chain Networks. He is also a Senior Sustainability Scientist within the Global Institute of Sustainability and the Director of Advanced Transportation and Logistics Algorithms and Systems (ATLAS) Research Center.

For close to 40 years, Pitu Mirchandani has been studying relevant problems on Dynamic Stochastic Networks, with interests in models and systems for making strategic/tactical/operational decisions in dynamic and stochastic networked environments. Problems related to traffic flows on transportation networks can be typically addressed as such. Mirchandani's contributions are in: (1) Location Decision Modeling, (2) Traveler and Vehicle Routing Models, (3) Real-time Data-Driven Decision Systems, and (4) general theoretical contributions to OR modeling, methods and algorithms. Dr. Mirchandani has been a principal investigator on a large number of research programs, including recent NSF projects on Real-Time Proactive Traffic Management, and Infrastructure Design and Operations of Electric Vehicles.

He has authored/co-authored four books and approximately 230 articles. Dr. Mirchandani is a member of IEEE, INFORMS, IIE, TRB, and a charter member of ITS-Arizona, where he was awarded the "Member of the Year" in 2007. He became a Fellow of INFORMS in 2015 and recently, in 2017, Fellow of IEEE.



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**FROM SET-AND-FORGET TRAFFIC CONTROL to CONNECTED "MIDAS":
A Possible Future of Proactive Traffic Management Systems**

PITU MIRCHANDANI

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Friday, March 24, 2017, Noon-1 p.m.
Hamburg Hall 1202 Lunch will be provided.

While driving on your favorite route to your destination, have you ever wondered why the technology you are seeing as far as traffic management is concerned is so antiquated? My answer to that is the people and organization that manage the traffic are not "cyber-physicists" nor "real-time optimizers". MIDAS hopes to demonstrate the synergistic use of a cyber-physical infrastructure consisting of smart-phone type devices; cloud computing, wireless communication, and intelligent transportation systems to manage vehicles in the complex urban network - through the use of traffic controls, route advisories and road pricing/rewards - to jointly optimize drivers' mobility as well as achieve the sustainability goals of reducing energy usage and improving air quality. A key element of MIDAS-CPS is the real-time streaming data collection and data analysis and the subsequent traffic management through proactive traffic controls and advisories, through visualizations of predicted queues ahead, effective road prices/rewards, and route advisories.

This talk will only focus on overall architecture of MIDAS and on the proactive traffic management component, while the sponsored multidisciplinary NSF project is the nexus of several areas: real-time image processing, real-time traffic prediction and supply/demand management, and data processing/management through cloud computing.