

Transportation Center Seminar.....

An Integrated Urban Model of Transportation, Land-Use, Energy, and Environment

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11:00 am – 12 noon

(Please Note Seminar Time)

Location:

Transportation Center
Chambers Hall- Lower Level
600 Foster, Evanston

Abstract: Transportation system is multifaceted and influenced by various other urban systems. Undeniably, transportation system, built-environment, urban logistics, public health, environment, and energy resources are fundamentally linked. Therefore, they must be explicitly captured if the full impacts of urban policies are to be assessed. In this seminar, we will review a comprehensive urban system framework that allows exploring the interactions and interrelationships between connected urban systems. At the core of the integrated urban framework, are two large-scale microsimulation models of ADAPTS and FAME. The ADAPTS model presents the next generation activity-based travel demand modeling paradigm that is developed specifically to address many limitations of practical activity-based models by retaining the link at the individual level between activities and travel. It models the processes by which activity-travel patterns are developed. In that sense, ADAPTS takes the activity-based paradigm one step further by explicitly and dynamically representing the process of activity planning rather than relying on a sequential series of models. This allows the direct impacts of policies in the decisions made during activity planning. The FAME model represents a pioneering effort in freight demand modeling that has a separate component for supply chain configuration and has a wide geographical and industrial coverage. The model incorporates firms' essential characteristics in replicating shipping behaviors, and aims at paving the way for more advanced behavioral freight microsimulation models. The models are currently further extended to include emission and dispersion models, as well as a public health impact model. In addition, the ADAPTS model is being expanded to include in-home activities that can help developing policy-sensitive and individual-level energy consumption and conservation models.

Bio: Kouros Mohammadian is a Professor of Transportation Systems at the University of Illinois at Chicago. He received his PhD from the University of Toronto in 2001. His research has covered various areas of transportation planning including travel behavior analysis, modeling of activity and travel patterns, travel surveys, computational analysis of transportation systems, agent-based microsimulation models, and freight and logistics modeling. Kouros has authored/co-authored over 240 scholarly publications. He is the co-editor-in-chief of the Journal of Transportation Letters and currently serves as the Chair of TRB's "Traveler Behavior and Values" committee (ADB10). He has also chaired two subcommittees of the Behavioral Processes (ADB10-4), and New Technologies in Travel Surveys (ABJ40-4). He has received several paper awards, including Ryuichi Kitamura award, Fred Burggraf award, and Charley Wootan award from TRB, recognizing his contributions to transportation research.