

Transportation Center Seminar Series presents.....

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The Transportation Center
Northwestern University

A Queuing Model of Activity Scheduling Behavior

Thursday, June 5, 2008

4:00 – 5:00 pm

Refreshments available at 3:30 pm

Location:

McCormick School of Engineering

Tech Institute

Room: L G68

ABSTRACT

Recognizing that travel is derived from the need to engage in activities, travel behavior analysts have increasingly focused on analyzing the activity scheduling decisions of individuals to better understand and forecast travel demand. A theory of individual activity scheduling is proposed based on the concept of a single-server queuing system, under which individuals behave analogous to service facilities, completing activities as they arrive. Furthermore, the notion of *stress* is introduced as an underlying motivator of activity-related decisions. The proposed theory is examined with respect to its potential for representing the effects and impacts of queued activities, or activities generated, but not necessarily completed, on activity-related decisions. An operational model of this theory is presented and discussed with respect to the effects of queue buildups and activity completion histories on stress. The model estimation results suggest the presence and importance of dynamic mechanisms underlying activity related decisions that govern stress accumulation and release over time.

Bio: Roger Chen is currently a post-doctoral fellow at the Transportation Center at Northwestern University. He completed his PhD in Civil Engineering from the University of Maryland, College Park and his MS and BS in Civil Engineering from The University of Texas at Austin. His current research focuses on modeling the trip-making and activity scheduling decisions of travelers, and understanding their impact on the behavior and performance of transportation systems over time. His research also strives to gain an understanding of human decision-making in the context of new communication technologies and information rich environments. Furthermore, he has worked on a broad spectrum of transportation related projects that range from the design of air cargo screening systems to emissions modeling for transportation planning.