Speaker: Bob Batt, The Wharton School, University of Pennsylvania

Date: Wednesday, January 30, 2013

Time: 11-12:15 pm

Location: Room 2509

Title: The Crowded Emergency Department: Empirical Studies of Patients & Providers Responding to Queue Length

Abstract: We study how the service process in a hospital emergency department changes in response to system load. Specifically, we examine how three groups of decision makers (triage nurses, patients, and physicians) modify their behavior as a function of waiting room census. We show that triage nurses order more diagnostic tests per patient when the waiting room is crowded, while physicians order fewer diagnostic tests. This can lead to the total testing per patient going up or down, but with reduced service times. With regard to patient behavior, we show that queue abandonment from the waiting room is not purely a function of the wait time. Rather, patients respond to what they can see, namely the waiting room census, and arrivals and departures from the waiting room. Further, patients appear to infer the relative health status of those around them and respond differently to the presence and movement of relatively sicker and healthier patients. Together, these findings of state-dependent behavior have implications for the management of both the waiting process and the clinical care process. Lastly, we show that including these state-dependencies in planning models is necessary to avoid overestimating system utilization.

Bio: Bob is a fifth-year doctoral student in Operations Management. His coursework covered a broad array of topics with an emphasis on empirical research methods. His current research is focused on hospital emergency department operations. Before starting his doctoral studies Bob was a manufacturing engineer at Hypertherm, Inc. and a research fellow at the Tuck School of Business at Dartmouth College.