

# INDUSTRIAL & SYSTEMS ENGINEERING SEMINAR

**Wednesday, October 5**

3:15 PM – Refreshments before the seminar

3:30 PM – Graduate Seminar

**Mechanical Engineering Room 4125 A & B**



## **Value of the Waiting List Information in Liver Transplant Decision-Making**

**Professor Burhan Sandikçi**

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In the United States, end-stage liver disease patients join a waiting list and then make accept/reject decisions for transplantation as deceased-donor organs are offered to them over time. These decisions are largely influenced by the patient's prospect for future offers, which can be ascertained most accurately by knowing the entire composition of the waiting list. We model and analyze this accept/reject decision from an individual patient's perspective (with the objective of maximizing her life expectancy) using a partially observed Markov decision process framework. We also utilize this model to evaluate the current UNOS (United Network for Organ Transplantation) policy that publishes an aggregated version of the waiting list data. Based on the results of an extensive numerical study that utilizes real data, we argue, in this talk, that the currently published imperfect waiting list information is nearly sufficient to eliminate the loss in a patient's life expectancy associated with the lack of such information, hence find support for current UNOS practice.

Bio: Burhan Sandikci is an Assistant Professor of Operations Management and FMC Faculty Scholar at the University of Chicago's Booth School of Business. He received his PhD in industrial engineering in 2008 from the University of Pittsburgh. His research interests span decision-making problems under uncertainty with particular focus on problems in medical decision-making and healthcare operations. His methodological interests include Markov decision processes (MPDs), partially observed MDPs, stochastic games, stochastic programming, and simulation. His work has been recognized at various levels by INFORMS Decision Analysis Society, INFORMS Bonder Scholarship, and IIE Pritsker Doctoral Dissertation Award.

**FOR MORE INFORMATION ON PROFESSOR SANDIKCI'S RESEARCH, PLEASE VISIT:**

[http://www.chicagobooth.edu/faculty/bio.aspx?person\\_id=12825653248](http://www.chicagobooth.edu/faculty/bio.aspx?person_id=12825653248)