



DR. MARK DASKIN

Clyde W. Johnson Collegiate Professor and Chair
Industrial & Operations Engineering
University of Michigan

Date: Friday, Apr 21, 2017

Time: 1 - 1:50 pm

Location: D3 W122

Nurse Staffing and Scheduling: Absenteeism, Uncertainty and Infeasibility

Abstract: This talk focuses on two recent nursing studies at the University of Michigan Health System (UMHS). The first deals with nurse staffing. UMHS uses three types of nurses: dedicated unit nurses, pool nurses and temp nurses. The key decision is how many unit and pool nurses to hire to minimize the expected cost in the presence of demand uncertainty and nurse absenteeism. The second project deals with assigning roughly 200 surgical nurses to monthly schedules. The problem is inherently infeasible. We solve it as a mixed integer linear programming problem with roughly 100,000 variables and 4,000,000 constraints. Results from both studies are discussed.

Biography: Dr. Daskin is the Department Chair of, and Clyde W. Johnson Collegiate Professor in, the Industrial and Operations Engineering Department at the University of Michigan. Prior to joining Michigan in 2010, Daskin was on the faculty at Northwestern University (for 30 years) and the University of Texas (for 1.5 years). His research focuses on the application and development of operations research techniques for the analysis of health care problems, as well as transportation, supply chain, and manufacturing problems. He is the author of two books: *Network and Discrete Location: Models, Algorithms and Applications* and *Service Science* (John Wiley, 2010). Dr. Daskin is a Fellow of both INFORMS and IIE and has received the David F. Baker Distinguished Research Award, the Technical Innovation Award and the Fred C. Crane Award for Distinguished Service from IIE as well as the Kimball Medal for service to the society and the profession from INFORMS and the Lifetime Achievement Award in Location Analysis from the Section on Location Analysis of INFORMS. He is a past editor-in-chief of both *IIE Transaction* and *Transportation Science*. In 2006, he was the president of INFORMS. He served as the chair of the Department of Industrial Engineering and Management Sciences at Northwestern University from 1995-2001.