NORTH CAROLINA STATE UNIVERSITY
EDWARD P. FITTS DEPARTMENT
OF INDUSTRIAL AND SYSTEMS ENGINEERING

OPERATIONS RESEARCH SEMINAR

OR/ISE 601/801

Tuesday October 7, 2014
434 Daniels Hall
4:30 p.m.

Nurse Staffing: Models and Analysis

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Abstract

Nurses account for approximately 25 percent of hospital costs, amounting to approximately $250 billion per year. Mandated nurse-to-patient ratios are the topic of current editorials and legislative actions in an attempt to improve patient safety. This presentation will examine data from one hospital on staffing needs for different units. Statistical analysis of the temporal and unit-to-unit correlations will be presented. In addition, models for optimizing the hiring of unit, pool and temporary nurses will be outlined in the face of uncertainty about the hospital census and employee absenteeism. The application of these models in the hospital in question will also be discussed. (This is joint work with Kayse Lee Maass, Zhehui Wang, Boying Liu and Mary Duck)

Refreshments will be served in Daniels Hall room 401 from 4:00 p.m. to 4:30 p.m.
Biography

Mark S. Daskin is the Department Chair of, and Clyde W. Johnson Collegiate Professor in, the Industrial and Operations Engineering Department at the University of Michigan. Daskin received his Ph.D. from the Civil Engineering Department at M.I.T. His research focuses on the application and development of operations research techniques for health care problems, as well as transportation, supply chain, and manufacturing problems. He is the author of over 75 refereed papers and two books: *Network and Discrete Location: Models, Algorithms and Applications* and *Service Science*.

Daskin is a Fellow of INFORMS and IIE and has received the Technical Innovation Award and the Fred C. Crane Award for Distinguished Service from IIE. He is a past editor-in-chief of *IIE Transaction and Transportation Science*. In 2006, he was the president of INFORMS. In 2009, he received the Kimball Medal for service to the society and the profession from INFORMS. He received the David F. Baker Distinguished Research Award from IIE and the Lifetime Achievement Award in Location Analysis from the Section on Location Analysis of INFORMS.