

# Industrial and Systems Engineering Seminar

## *Would You Like to Upgrade to a Premium Room? Evaluating the Benefits of Standby Upgrades*

Wednesday, March 25

3:15 PM – Refreshments before the Seminar

**3:30 PM – Graduate Seminar**

**Mechanical Engineering Room 4125 A & B**



### **Professor Mark Ferguson**

Professor

Darla Moore School of Business

University of South Carolina

An important challenge faced by hotels is how to set their premium room price differential over their standard rooms and how to manage the upsell process. Offering standby upgrades, where the customer is only charged if the upgrade is available at the time of arrival, is one technique that has become increasingly popular in practice for monetizing the premium room inventory that may otherwise go unused. We develop a model of premium room and standby upgrade pricing under uncertain market size and examine how and when the standby upgrades can provide additional revenue for a hotel. When the guests are myopic, we show that the standby upgrades can be used as a powerful price discrimination tool, especially for hotel properties with low standard-to-premium room ratios and/or low target occupancy rates. On the other hand, when the guests are strategic, the benefit of the standby upgrades is significantly diminished. In contrast to the myopic case, we show that standby upgrades provide little additional revenue when the hotel property has a low standard-to-premium room ratio and/or low target occupancy rate. Finally, we investigate the revenue penalty incurred when a hotel incorrectly identifies either the type of guest behavior or the proportion of guests who will be exposed to standby upgrades. Our findings thus provide guidance on the hotel types and environments that are most suitable for standby upgrades.

**Bio:** Dr. Mark Ferguson is a Distinguished Business Foundation Fellow and Professor of Management Science in the Darla Moore School of Business, University of South Carolina, where he serves as the chair of the Business Analytics task force. He received his Ph.D. in Business Administration, with a concentration in Operations Management from Duke University in 2001. He holds a B.S. in Mechanical Engineering from Virginia Tech and an M.S. in Industrial Engineering from Georgia Tech.

Dr. Ferguson's research interests involve many areas of supply chain management including supply chain design for sustainable operations, pricing and revenue management and the operations/marketing interface. Two of his papers have won best paper awards from the Production and Operations Management Society (POMS) and three of his research projects have been funded by the National Science Foundation. He is the co-author of the books *Segmentation, Revenue Management and Pricing Analytics* and *Pricing Segmentation and Analytics* and co-editor of the book: *Closed Loop Supply Chains: New Developments to Improve the Sustainability of Business Practices*. He has served as president of the INFORMS Manufacturing and Services Operations Management Society, the president of the POMS College of Supply Chain Management and the chair of the INFORMS Revenue Management and Pricing Section. Prior to joining the Moore School in 2011, he was the Steven Denning Professor of Technology and Management at the College of Management at the Georgia Institute of Technology and spent five years as a manufacturing engineer and inventory manager with IBM.