

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

**IE/OR 601/801**

**Joint Seminar with Operations Research**

**Friday November 30, 2007  
218 Daniels Hall  
11:30 a.m.**

Integrated Market Selection and Production Planning:  
Complexity and Solution Approaches

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Industrial and Systems Engineering Department  
University of Florida  
Gainesville, FL**

**Abstract**

Emphasis on effective demand management is becoming increasingly recognized as an important factor in operations performance. Operations models that account for supply costs and constraints as well as a supplier's ability to influence demand characteristics can lead to an improved match between supply and demand. This talk will discuss a new class of optimization models that allow a supplier to select, from a set of potential markets, those markets that provide maximum profit when production/procurement economies of scale exist in the supply process. The resulting optimization problem we study possesses an interesting structure and we show that although the general problem is NP-complete, a number of relevant and practical special cases can be solved in polynomial time. We also provide a computationally very efficient and intuitively attractive heuristic solution procedure that performs extremely well on a large number of test instances.

**Refreshments will be served in 401 Daniels Hall at 11:00 a.m.**