



**Engineering Management, Information, and Systems
Seminar Series**

Research Symposium

Optimization Framework for a Multi-Agent Dynamic Response



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and Dollar at The University of Texas at Arlington**

**Friday, November 11, 11am
Room 100, Cauth Hall**

Abstract:

This research develops models are formulated; specifically, an LSE model and a dynamic pricing customer (DPC) model. The objective of these models is to minimize long-term costs and discomfort penalties of the LSE and DPC. Because preferences of these two agents are different, the models are inseparable and difficult to solve. Deterministic finite horizon linear programs are solved as an approximation of the stochastic models and computational experiments are provided. In addition, this study develops stochastic bounds under the two-agent framework in which the DPC operate independently of the LSE, but the LSE must react to the DPC actions. Experiments show that when the two agents both have perfect information, the LSE may have an inferior objective compared with the case of in which both agents follow a mean value problem policy. Nevertheless, there are bounds when the DPC follow the same set of actions.

Biography:

Dr. Jay Rosenberger is Professor and Director of Research Development in the Department of Industrial, Manufacturing, & Systems Engineering and the Associate Director and incoming Interim Director of a US Department of Transportation sponsored University Transportation Center, called the Center for Transportation Equity, Decision, and Dollar at The University of Texas at Arlington. He is also the former Director of the Center on Stochastic Modeling, Optimization, & Statistics. His research interests include mathematical optimization and operations

Research Institute of Industrial Engineers. He is the former chair and cluster
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