New Research Directions in Optimization Seminar Series

“Operational Effectiveness for 21st Century Challenges- New Research Directions”

Lecture by
Jose Emmanuel Ramirez-Marquez, Ph.D
Associate Professor
School of Systems & Enterprises
Stevens Institute of Technology

Wednesday, March 9th, 2011
5:00 - 6:00 pm
Location: CRBL C205

Abstract
This presentation will describe current research being developed at the System Development & Maturity Lab (see SysDML.com) to solve problems of national importance related to operational effectiveness. In specific, two of the research thrusts at the SysDML will be described in detail:

1) Emergency Preparedness Planning (EP²): Based on the ongoing collaboration between SysDML and the New York City Bureau of Emergency Management, I will present the quantitative framework under-development to help guide response agencies in their decision-making. In the event of a disaster, EP² allows response agencies to rapidly reach the affected populations and to efficiently process those in need.

2) Design for System Resilience: I will describe the relationship of vulnerability analysis with system resilience for the case of complex networks. Also, I will briefly describe the engineering methods currently being developed to characterize the importance of network disruptions and identify the network vulnerability set.

The talk will discuss: i) how the projects develop from concepts to fully developed research thrusts, ii) current challenges being addressed and iii) the engineering background necessary to meet those challenges. Also, this presentation will describe how my personal Ph.D. process has provided me with development opportunities both personal and career oriented.

Dr. Jose Emmanuel Ramirez-Marquez is an Associate Professor in the School of Systems & Enterprises at Stevens Institute of Technology. He holds M.Sc. and Ph.D degrees from Rutgers University in Industrial Engineering. His research efforts are currently focused on the development of mathematical models for sensor networks operational effectiveness, the computational analysis of system resilience and, the development of optimal planning for disaster preparedness. In these areas, Dr. Ramirez-Marquez has conducted funded research for both private industry and government. He has published over 70 refereed manuscripts in technical journals, book chapters, conference proceedings and industry reports. Dr. Ramirez-Marquez is currently serving as President of the Quality Control and Reliability division board of the Institute of Industrial Engineers. Internationally, he is a member of the Technical Committee on System Reliability for the European Safety and Reliability Association. He can be contacted at jmarquez@stevens.edu

Hosted by the Department of Industrial, Manufacturing and Systems Engineering
IMSE
The College of Engineering
The University of Texas at El Paso

New Research Directions in Optimization Seminar Series is being sponsored by the United States Department of Education. Award # 2010-38422-19963