March 25, 2016

ISOM Room 210

2:00 – 3:00PM

(Light refreshments provided)

Hosted By

UMass Amherst
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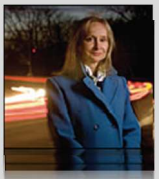

Professor Anna Nagurney

A two-stage stochastic shift scheduling model for cybersecurity workforce optimization with on call options

This paper proposes a model and solution techniques for integrated staffing and shift scheduling decisions in a 24/7 cybersecurity operations center. We model this problem as a two-stage stochastic shift scheduling problem over a 14-day pay period with three possible shifts per day, several staffing and scheduling constraints, uncertain demand and on call staffing options. To solve this problem, we discretize this problem into a single integer program and solve it using a column generation based heuristic. Computational results are included.

This work is joint work with Dr. Doug Altner (MITRE).

Dr. Les Servi
The MITRE Corporation,
Bedford, MA

Dr. Servi received his Ph.D. in engineering from Harvard University, worked at Bell Laboratories and GTE (now Verizon) Laboratories pursuing telecommunication research, served 1 year as a visiting scientist at Harvard University and MIT, and worked at MIT Lincoln Lab. He currently is a Group Leader for a Decision Analytics Group at The MITRE Corporation. At MITRE he has contributed to a diversity of areas including the analysis of social media, portfolio analysis, cyber security, designing software test plans, and evaluating Human Social Culture Behavior (HSCB) government sponsored projects. In 2010-11, he served on a Defense Science Board task force on Counterinsurgency (COINS) and Intelligence, Surveillance, and Reconnaissance (ISR) Operations. In 2016 he began serving on a Defense Science Board summer study.

Dr. Servi has an extensive publication record in the area of Operations Research with five papers having more than 200 citations and 10 patents derived from his analysis. He has been very active in INFORMS and served on its Board of Directors for 6 years, is a Fellow of INFORMS, he is the founding Chair of the INFORMS Social Media Analytics subdivision, he was previously Chair of the INFORMS Telecommunication Society, the INFORMS Applied Probability Society and is currently the chair of the INFORMS Boston Chapter. He has been an Associate Editor of Operations Research, Management Science, INFORMS Journal of Computing, and has served on Ph.D. thesis committees at Harvard University, MIT and Boston University.