■ SC22

C - Room 18C, Level 4

Service Operation Management

Sponsor: Service Science
Sponsored Session

Chair: Eunji Lim, Assistant Professor, University of Miami, University of Miami, Coral Gables, United States of America, lim@miami.edu

Co-Chair: Murat Erkoc, Assistant Professor, University of Miami, Miami, FL, United States of America, merkoc@miami.edu

1 - Simulation-based Optimization for Vehicle Routing Problems with Stochastic Demands and Travel Times
Yao Luo, University of Miami, 1251 Memorial Drive, Coral Gables, FL, 33146, United States of America, ly1987510@gmail.com, Eunji Lim

When dispatching vehicles to different locations, the uncertainty in demands or travel times has to be incorporated into one's operational decisions to prevent stock-outs or long travel times. We formulate the vehicle routing problem with stochastic demands and travel times as constrained simulation optimization, and propose an efficient method that converts the original problem to a minimax problem. We will discuss the potential impact of the proposed method and present numerical examples.

2 - Lumpy Demand Management with Pricing in the Service Sector
Murat Erkoc, Assistant Professor, University of Miami, Miami, FL, United States of America, merkoc@miami.edu, Salvador Romo-Fragoso

We consider a contractor who bids for proposals for "big deals" that are relatively long term service projects. The demand for such requests are lumpy and wining the proposals are contingent upon the price bids and available capacity. We investigate optimal pricing policies under a Markov Decision Process Model. Further we study demand acceptance policies and their impact on pricing when the contractor also carries out "regular jobs" that require short term commitments.

3 - Sustainable Capacity Management in Service Operations
Mehmet Bayram Yildirim, Associate Professor, Wichita State University, 1845 N Fairmount, Wichita, KS, 67260-0035, United States of America, bayram.yildirim@wichita.edu, Mehmet Barut, Timur Keskinturk

Utilization of a system, service or production, can be enhanced significantly by managing the capacity intelligently. In this study, we focus on improving the profitability of limited resources in service operations. Considering different customer segments we utilize revenue management concept in developing guidelines helping manager differentiate the incoming requests. The performance is benchmarked to classical fairness approach and compared to the optimum for effectiveness.

4 - Stochastic Inventory Model for Health Care Supply Chain Under Regular Demand and Surge Demand
Mingzhou Jin, Associate Professor, Mississippi State University, P.O. Box 9542, Mississippi State, MS, 39762, United States of America, mjin@ise.msstate.edu, Md Roni

Irregular event such as natural disaster, multiple-car accidents, terrorist attacks, causes sudden huge demand for medicine in health care supply chain system. Hence, demand process in health care can be seen as a combination of regular demand and surge demand. This paper appliers the level crossing theory to derive stationary distribution of the inventory level and furthermore heuristically develop the optimal inventory policy with regular order and emergency order.

■ SC23

C - Room 18D, Level 4

Panel Discussion: Modeling Inter-Cultural Service Encounters

Sponsor: Service Science
Sponsored Session

Moderator: Alexandra Medina-Borja, Assistant Professor, University of Puerto Rico at Mayaguez, II-205 Industrial Engineering Building, Mayaguez, PR, 00680, United States of America, alexandra.medinaborja@upr.edu

1 - Panel Discussion: Modeling Inter-cultural Service Encounters
Panelists: Alexandra Medina-Borja, Assistant Professor, University of Puerto Rico at Mayaguez, II-205 Industrial Engineering Building, Mayaguez, PR, 00680, United States of America, alexandra.medinaborja@upr.edu, William Hefley, Clinical Associate Professor, University of Pittsburgh, Katz Graduate School of Business, Mervis Hall, Pittsburgh PA 15260, United States of America, wehefley@katz.pitt.edu, Kalyan Pasupathy, Assistant Professor, University of Missouri- Columbia, United States of America, pasupathyk@health.missouri.edu, Paul Maglio, Clinical Associate Professor, University of Pittsburgh, Katz Graduate School of Business, Mervis Hall, Pittsburgh PA 15260, United States of America, wehefley@katz.pitt.edu, John Ruggiero, Edmund B. O'Leary Professor of Economics, University of Dayton, Department of Economics and Finance, 300 College Park, Dayton OH 45469-2251, United States of America, John.Ruggiero@notes.udayton.edu, Kostas Triantis, Professor, Virginia Tech, triantis@vt.edu

This panel presents a summary of a 2009 research workshop in Puerto Rico sponsored by NSF's Service Enterprise Systems. The goal of the workshop was to hasten the development of modeling frameworks that include inter-cultural considerations by fostering interdisciplinary research among a variety of fields, academic disciplines and technical clusters.

■ SC24

C - Room 19A, Level 4

Planning for Extreme Weather Events II

Sponsor: Public Programs, Service and Needs
Sponsored Session

Chair: Melike Baykal-Gursoy, Associate Professor, Rutgers, 96 Frelighuysen Rd., Piscataway, NJ, 08854-8018, United States of America, gursoy@rci.rutgers.edu

1 - Planning for Extreme Heat Events
Endre Boros, Professor, Rutgers University, Rutcor, 640 Bartholomew Road, Piscataway, NJ, United States of America, boros@rutcor.rutgers.edu, Christie Grewe Nelson, Randyn Bartholomew

We present a robust OR model for deciding about locations of and assigning resources to cooling centers to help to cope with extreme heat events. We present numerical results with data from Newark, NJ.

2 - Health Care Needs Planning for Extreme Heat Events
Sara Ghorbani, PhD Candidate, Rutgers, IE Deparment, Piscataway, NJ, United States of America, saraghorbani21@gmail.com, Pooyan Kazemian

We study the shelter location problem in urban environment. Meta-heuristic simulation optimization method is employed to minimize the expected number of extra deaths due to extreme heat. The algorithm decides on where to set up triage and shelters, assigning patients to triage centers, and then to health care centers.

3 - Component Criticality in Disease Spreading Networks with Limited Network Information
David Fajardo, Graduate Research Assistant, University of Texas at Austin, Earnest Cockrell Jr. Hall, 6.204, Austin, TX, 78712, United States of America, davidfajardo2@gmail.com, Travis Waller, Lauren Gardner

We derive estimates of network component criticality in the spread of disease along a human social network based on different degrees of network information. We estimate the impact of removing specific network components on the pattern and magnitude of the disease spreading process. We will further explore the impact that network structure information has on the quality of these estimates.

■ SC25

C - Room 19B, Level 4

Joint Session SPPSN/ TSL: Surveys and Models for Logistics Management in Disasters

Sponsor: Public Programs, Service and Needs/ Transportation Science and Logistics Society
Sponsored Session

Chair: Burak Eksioglu, Associate Professor, Mississippi State University, P.O. Box 9542, Mississippi State, MS, 39762, United States of America, beksioglu@ise.msstate.edu

1 - Optimizing the Use of Transit Systems with Information Updates During No-notice Evacuations
Huseyin Tunc, Mississippi State University, P.O. Box 9542, Industrial & Systems Engineering Department, Mississippi State, MS, 39762, United States of America, ht100@msstate.edu, Burak Eksioglu

Evacuation of transit dependent population during a disaster is necessary in order to minimize casualties and losses. This paper presents a mixed integer model for evacuating transit dependent citizens during a no-notice disaster. The paper also