This process for biomedical devices development and bio-modification of Perez Model.

Heng Su, Georgia Tech, Atlanta GA, United States of America, hsu31@gatech.edu

This paper presents the investigation of soft tissue expansion process for biomedical devices development and bio-manufacturing. The objective of the investigation is to describe the expansion as a manufacturing process with sufficient specifications, such that the process is reproducible within a given tolerance. This paper examines how collagen-based, soft tissue responds to mechanical deformation and the effects of different process parameters.

NEW SESSION CHAIR

Sechan Oh, IBM Research Almaden, San Jose, CA 95120, United States of America, seohan@us.ibm.com

NEW PRESENTATIONS

SA43
2 - A Prescription for Budget Woes at Gracious University Hospital
Karen Hicklin, North Carolina State University, 111 Lampe Drive, Raleigh, NC, United States of America, khicklin@ncsu.edu, Anita Vila-Parrish, Julie Ivy

Lolly’s Restaurant is a short, entry level case study for students to determine the supporting cost data. The case was taught in the spring of 2013 for the first time in both the first-year full-time MBA supply chain elective with 2 sections and over 100 students and the second year full time MBA supply-chain elective with 2 sections and over 100 students.
This was the first time at Darden where a case was introduced to 7 different sections at the same time. Eastman management representatives who are featured in the case visited Darden that day and took part in the case discussions. This was used for the videos developed that can now be used in conjunction with the case. The student feedback on the case both in the first year and the second year has been very positive and was mentioned as one of the highlights of the course.

■ SB14
2 - Learning in Combinatorial Optimization: How and What to Explore?
Denis Saure, University of Pittsburgh, Pittsburgh, United States of America, dsaure@pitt.edu, Sajad Modaresi, Juan Pablo Vielma
We study sequential combinatorial optimization under model uncertainty. We show that for balancing the implied exploration vs exploitation trade-off it is critical to resolve the issue of what information to collect and how to do so. Our answer to these questions lies in solving an adjunct formulation, which looks for the cheapest solution-based optimality guarantee. We develop fundamental limit on performance, and develop an efficient policy implementable in real-time.

3 - A Fully Sequential Elimination Procedure for Indifference-Zone Ranking and Selection with Tight Bounds on Probability of Correct Selection
Peter Frazier, Assistant Professor, Cornell University, School of ORIE, Rhodes Hall, Ithaca, NY, United States of America, pf98@cornell.edu
Existing procedures for indifference-zone (IZ) ranking and selection have loose bounds on probability of correct selection, leading them to sample more than necessary. We present BIZ (Bayes-inspired Indifference Zone), the first sequential elimination IZ procedure with tight bounds on worst-case preference-zone probability of correct selection. Tight bounds allow the procedure to produce solutions with less sampling effort.

4 - Mutual Information Based Matching for Causal Inference on Observational Data
Alexander Nikolaev, Assistant Professor, University at Buffalo (SUNY), 312 Bell Hall, Buffalo, NY, 14260-2050, United States of America, anikolaev@buffalo.edu, Lei Sun
An optimization-driven approach is presented for making causal inference with observational data. Comparing units non-randomly exposed to treatment against those unexposed, the paper motivates algorithms that work to minimize the mutual information (MI) between the covariate vectors of compared units and the treatment variable. This approach is model-free, flexible and accurate. Optimality conditions are derived by treating non-linearity in the MI function. Computational results are reported.

■ SB33
2 - Solving the Railway Yard Operation Problem: Greedy Heuristics, Integer Programming Models, and Waiting Time
Hai Wang, PhD candidate, Massachusetts Institute of Technology, 2D, 550 Memorial Drive, Cambridge, MA, 02139, United States of America, haiwang@mit.edu, Jiangang Jin, Maokai Lin

3 - Optimizing the Operational Plan in Railway Classification Yard by Combining Genetic Algorithm and Sub-period Rolling
Wenliang Zhou, Central South University, School of Traffic and Transportation, China, zwl_0631@csu.edu.cn, Lianbo Deng, Zhao Zhou

4 - A Solution Approach for Railway Classification Yard
Setareh Borjian, Massachusetts Institute of Technology, 60 Wadsworth Street, Cambridge, Ma, 02142, United States of America, sborjian@mit.edu, Krishna Selvam

LATE CANCELLATIONS
■ SB02
2 - Extensions to AMPL for Optimisation under Uncertainty
Gautam Mitra,
■ SB27
1 - Using Virtualization Technologies to Enable a Mobile IaaS System for Tactical Edge Data Analytics
Albert Barreto
■ SB71
3 - Impact of Aircraft Arrival Processes on Airport Capacity and Delay
Abdullah Karaman

REVISED PRESENTATION
■ SB57
2 - Group-Buying under Strategic Consumers
We study a revenue management problem in which a retailer operates a “group-buy” mechanism under strategic customers. At the beginning of the selling season, the retailer announces a regular price and a lower “group buy” coupon price. The low price becomes available as soon as a threshold number of consumers subscribe to the coupon. We analyze the subgame played among consumers and show that they follow a threshold-type purchasing rule in equilibrium. Then, through a numerical study, we calculate the retailer’s expected revenues under our proposed mechanism and compare it with other benchmarks.
Navaporn Surasvadi

SC
NEW PRESENTATIONS
■ SC10
2 - VidCo Demand Forecast Information Sharing Case
Duygu Dagli, PhD Student, University of Texas at Dallas, Naveen Jindal School of Management, 800 West Campbell Road, Richardson, TX, 75080, United States of America, dxd115020@utdallas.edu, Ozalp Ozer, Yanchong Zheng
VidCo Demand Forecast Information Sharing Case has been recently completed and has not been used in a classroom yet. However, the complementary computer simulation, the Forecast Information Sharing Game, has been used in undergraduate, MBA and executive MBA level courses at MIT, Stanford, and University of Texas at Dallas. The game successfully facilitated rich discussions. As students were able to put themselves in the shoes of both the downstream and upstream firms, they were able to diagnose the reasons for information asymmetry. They also came up with strategies, which would make them communicate demand forecasts truthfully or would make them trust the forecasts reported by the downstream firms.
3 - Redesigning Pittsburgh Port Authority’s Bus Transit System
Ersin Korpeoglu, Carnegie Mellon University Tepper School of Business, 5000 Forbes Avenue, Pittsburgh, United States of America, ekorpeoglu@andrew.cmu.edu, Fatma Kilinc-Karzan
This case was used in teaching an undergraduate business elective course in Carnegie Mellon University, Tepper School of Business entitled “Mathematical Models for Consulting” during fall 2012. The feedback from the class was dominantly positive. Students showed strong enthusiasm for applying what they learned on a practical case and stated that they preferred working on practice problems rather than hypothetical questions. In addition to this, the authors are planning to use this case in upcoming elective MBA courses on operations as well.
4 - Markdown Management at Sports Unlimited
Masoud Talebian, University of Newcastle, Callaghan, Australia, Masoud.Talebian@newcastle.edu.au, Garrett van Ryzin
The case study focuses on the analytical aspects of designing markdown policies. For this purpose, it describes a retail sporting goods chain that operates nationally. Merchants (buyers) are
responsible for buying items and setting initial prices. During the sales season, merchants evaluate items for possible markdowns and eventually mark them out-of-store so that they can be salvaged. Merchants currently rely on a price optimization tool, called PO, to manage markdowns. PO essentially identifies the items with low weekly sell-through rates as candidates for markdowns. Weekly sell-through is measured as the ratio of weekly sales to initial inventory. The firm’s current policy is to target an initial markdown of 50%.

- SC12
Two - Improving Christofides’ Algorithm for the s-t Path TSP
Hyung-Chan An, Postdoctoral Fellow, EPFL, EPFL IC IIF THL 1 INJ 130, Station 14, Lausanne, Switzerland, hyungchan.an@epfl.ch, Robert Kleinberg, David Shmoys
We present a deterministic (1+\sqrt(5))/2-approximation algorithm for the s-t path TSP for an arbitrary metric. Given a symmetric metric cost on n vertices including two prespecified endpoints, the problem is to find a shortest Hamiltonian path between the two endpoints; Hoogeveen showed that the natural variant of Christofides’ algorithm is a 3/2-approximation algorithm for this problem, and this asymptotically tight bound in fact had been the best approximation ratio known until now. We modify this algorithm so that it chooses the initial spanning tree based on an optimal solution to the Held-Karp relaxation rather than a minimum spanning tree; we prove this simple but crucial modification leads to an improved approximation ratio, surpassing the 20-year-old barrier set by the natural Christofides’ algorithm variant. Our algorithm also proves an upper bound of (1+\sqrt(5))/2 on the integrality gap of the path-variant Held-Karp relaxation. The techniques devised in this paper can be applied to other optimization problems as well: these applications include improved approximation algorithms and improved LP integrality gap upper bounds for the prize-collecting s-t path problem and the unit-weight graphical metric s-t path TSP. We also provide a computational evaluation of the performance of our algorithm to complement the present results.

- SC16
Two - Stress on the Ward: Evidence of Safety Tipping Points in Hospitals
Yonatan Gur, Columbia University, 3022 Broadway, New York, NY, 10027, United States of America, ygur14@gscolumbia.edu, Omar Besbes, Assaf Zeevi
We consider a non-stationary variant of a sequential stochastic optimization problem, where the underlying cost functions may change along the horizon. We propose a measure, termed variation budget, which controls the extent of said change, and study how restrictions on this budget impact achievable performance. We identify sharp conditions under which it is possible to achieve long-run-average optimality and more refined performance measures such as rate optimality that fully characterize the complexity of such problems. In doing so, we also establish a strong connection between two rather disparate strands of literature: adversarial online convex optimization; and the more traditional stochastic approximation paradigm (couching in a non-stationary setting). This connection is the key to deriving well performing policies in the latter, by leveraging structure of optimal policies in the former. Finally, tight bounds on the minimax regret allow us to quantify the “price of non-stationarity,” which mathematically captures the added complexity embedded in a temporally changing environment versus a stationary one.
In the majority of developed countries, the level of influenza vaccination coverage in all age groups is suboptimal. Hence, the authorities offer different kinds of incentives for people to become vaccinated such as subsidizing vaccination or placing vaccination centers in malls to make the process more accessible. We built a theoretical epidemiological game model to find the optimal incentive for vaccination and the corresponding expected level of vaccination coverage. The model was supported by survey data from questionnaires regarding people’s perceptions about influenza and the vaccination against it. Result suggest that the optimal magnitude of the incentives should be greater when less contagious seasonal strains of influenza are involved and in regions where vaccination coverage is expected to be higher. The optimal incentive should be also greater for the nonelderly population rather than the elderly, and should rise as high as $57 per vaccinated individual so that all children between the ages of six months and four years will be vaccinated.

REVISED PRESENTATION

- SC23
  - 3 - Flexible Leasing Contracts in a Sustainable Fleet Replacement Model
    We study the fleet replacement problem taking into account the minimization of cost and risk, simultaneously, in a stochastic multi-period setting, using conditional value at risk. New engine vehicles are considered as an alternative solution to reduce fossil fuel consumption and greenhouse gas emission. We develop a model that considers the possibility of early termination of the leasing contracts using real options. We validate the results by a real world case study. Fernando Oliveira

LATE CANCELLATIONS

- SC42
  - 3 - Recovery Legislations versus Taxation/Subsidy Policies for Product Remanufacturing
    Shumail Mazahir

NEW PRESENTATIONS

- SD12
  - 2 - Iterative Auction Design for Graphical Valuations
    Ozan Candogan, Duke University, Fuqua School of Business, Durham, NC, United States of America, candogan@mit.edu, Pablo Parrilo, Asuman Ozdaglar In this work, we develop new practical and efficient iterative auctions for multi-item settings that exhibit both value complementarity and substitutability. We obtain such auctions by focusing on a natural class of value functions that can be compactly represented by associating a value graph with the set of items the auctioneer sells. We start our analysis by establishing that when the underlying value graph is a tree (and satisfies an additional sign-consistency condition), a Walrasian equilibrium always exists, and an efficient allocation can be found by solving a linear programming formulation of the efficient allocation problem. However, when the underlying graph is not a tree, these results no longer hold. On the other hand, we also show that in this case a more general pricing equilibrium always exists, and provide a stronger linear programming formulation that can be used to identify the efficient allocation for general graphical valuations. By considering iterative solutions of the aforementioned LP formulations, and complementing them with appropriate payment rules, we obtain iterative auction formats that implement the efficient outcome at an (ex-post perfect) equilibrium. These auctions terminate when a market clearance condition holds, and rely on a simple bidder-specific graphical pricing rule: the auctioneer offers a bidder-specific price for each item, and bidder-specific discounts/markups for pairs of items. Our results suggest when value functions of bidders exhibit some special structure, it is possible to systematically exploit this structure in order to develop simple efficient iterative auction formats.

- SD23
  - 3 - Data-driven Chance Constrained Stochastic Program
    Ruwei Jiang, University of Florida, 411 Weil Hall, University of Florida, Gainesville, FL, 32611, United States of America, ruijiang@ufl.edu, Yongpei Guan Chance constrained programming is an effective and convenient approach to control risk in decision making under uncertainty. However, due to unknown probability distributions of random parameters, the solution obtained from a chance constrained optimization problem can be biased. In addition, instead of knowing the true distributions of random parameters, in practice, only a series of historical data, which can be considered as samples taken from the true (while ambiguous) distribution, can be observed and stored. In this paper, we derive stochastic programs with data-driven chance constraints (DCCs) to tackle these problems and develop equivalent reformulations. For a given historical data set, we construct two types of confidence sets for the ambiguous distribution through nonparametric statistical estimation of its moments and density functions, depending on the amount of available data. We then formulate DCCs from the perspective of robust feasibility, by allowing the ambiguous distribution to run adversely within its confidence set. After deriving equivalent reformulations, we provide exact and approximate solution approaches for stochastic programs with DCCs under both moment-based and density-based confidence sets. In addition, we derive the relationship between the conservatism of DCCs and the sample size of historical data, which shows quantitatively what we call the value of data.

- SD24
  - 4 - Robust Optimization in Data Rich Environments
    Nathan Kallus, PhD Student, Massachusetts Institute of Technology, 77 Massachusetts Ave, E40-149, Cambridge, MA, 02139, United States of America, kallus@mit.edu, Vishal Gupta, Dimitris Bertsimas The last decade has seen an explosion in the availability of data for operations research applications as part of the Big Data revolution. Motivated by this data-rich paradigm, we propose a novel schema for utilizing data to design uncertainty sets for robust optimization using statistical hypothesis tests. The approach is flexible and widely applicable, and robust optimization problems built from our new sets are computationally tractable, both theoretically and practically. Furthermore, optimal solutions to these problems enjoy a strong, finite-sample probabilistic guarantee. We also propose concrete guidelines for practitioners and illustrate our approach with applications in portfolio management and queueing. Computational evidence confirms that our data-driven sets significantly outperform conventional robust optimization techniques whenever data is available.

- SD11
  - 5 - Unbiased Estimation with Square Root Convergence for SDE Models
    Chang-han Rhee, Stanford University, Stanford University, Stanford, CA, 94305, United States of America, chhrhee@stanford.edu, Peter Glynn In many settings in which Monte Carlo methods are applied, there may be no known algorithm for exactly generating the random object for which an expectation is to be computed. Frequently, however, one can generate arbitrarily close approximations to the random object. We introduce a simple randomization idea for creating unbiased estimators in such a setting based on a
sequence of approximations. Applying this idea to computing expectations of path functionals associated with stochastic differential equations (SDEs), we construct finite-variance unbiased estimators with a "square root convergence rate" for a general class of multi-dimensional SDEs. We then identify the optimal randomization distribution. Numerical experiments with various path functionals of continuous-time processes that often arise in finance illustrate the effectiveness of our new approach.

**LATE CANCELLATIONS**

- **SD35**
  4 - Which Physicians Are More Likely To Be Reviewed Online By Patients?  
  Haijing Hao

- **SD38**
  4 - Extracting Sentiments from Financial Text  
  Brikesh Raj Upreti

**Monday, October 7, 2013**

MA

**REVISED PRESENTATION**

- **MA29**
  Introducing Julia - A New Open Source Technical Programming Language  
  Julia is a new open source technical programming language that is scalable, high-performance, and open source. Julia is fast, approaching and often matching the performance of C/C++, easy to learn, and designed for distributed computation. This session will demonstrate some of the special capabilities of Julia and give you the tools you need to get started using this exciting technical computing language.
  Michael Bean, mbean@forio.com

- **MA44**
  3 - Capacity Investment with Demand Learning  
  How should a profit-maximizing firm adjust its capacity for a product with a finite life cycle when the market information is incomplete but can be learned? We characterize the firm's optimal policy about when and by how much to adjust the capacity in a multi-period model. We also propose simple data-driven heuristics, show the asymptotic convergence, and characterize the convergence rate. We finally illustrate the benefit of demand learning using data of Ford Focus.
  mbean@forio.com

**MB**

**LATE CANCELLATIONS**

- **MB17**
  1 - Risks in Lean Service  
  Seoung Dae Kim

- **MB20**
  2 - Value of Flexibility in Oil and Gas Projects: The Case of Deferral Option  
  Babak Jafarizadeh

- **MB27**
  1 - Narrative Analysis in Support of a Rapid Fielding Process  
  Michael Jaye

**REVISIONS**

- **MB56**
  3 - Monitoring a Dynamic Network  
  Bahareh Azarnoush, Student, Arizona State University, Tempe, AZ, 85281, United States of America, bazarnou@asu.edu.  
  George Runger, Jennifer Bekki, Kamran Paynabar  
  Networks can naturally model many real world phenomena. Although the static modeling of networks has been the focus of much research, the intrinsic dynamics of real world phenomena is an important aspect and needs further attention. This in turns calls for the need of monitoring the dynamics of networks. This work presents an approach to this problem.

**MONDAY INTERACTIVE SESSION**

**LATE CANCELLATIONS**

- **25** - Transactive Memory Systems: Information Sharing and its Effect on Team Performance  
  Courtney Williamson

- **34** - Berth Allocation Problem under Stochastic Nature  
  Evrim Ursavas

**MC**

**REVISIONS**

- **MC34**
  Updated Abstract  
  2 - On the Inadequacy of Var-based Risk Management: VaR, CVaR, and Nonlinear Interactions  
  We examine the role of VaR-constraints in managing financial risk accumulated by risk-seeking traders. This risk can be either finite or unbounded depending on the asset distributions. In either instance, VaR thresholds are seen to be inadequate in guarding against financial ruin.

  4 - Robust Dependence Modeling for High-dimensional Covariance Matrices  
  Estimating dispersion matrices is a fundamental step for many applications, but classical sample covariance estimates are very sensitive to outliers. We propose a new robust covariance estimator using the regular vine structure and robust partial correlation estimators. We demonstrate the effectiveness of such estimator in the active asset allocation application.

**LATE CANCELLATIONS**

- **MC17**
  2 - Warranty Pricing with Product Failures and Forward Looking Consumers: An Empirical Approach  
  Jingqi Wang

- **MC27**
  1 - How to (Can You?) Influence a Population's Attitude with a Single Whisper  
  Robert Burks

- **MC38**
  1 - Multi-objective Optimization g for a Novel Batch Scheduling Problem  
  Jun Pei

- **MC69**
  2 - When do People Prefer Less Decision Alternatives?  
  Jae-Hyeon Ahn

**MD**

**Revision**

- **MD59**
  2 - The Environmental Impact of In-house and Outsourced Remanufacturing  
  Lan Wang, Student, University of Florida, University of Florida, STZ 355B, Gainesville, FL, 32611-7169, United States of America, lan.wang@warrington.ufl.edu.  
  Gangshu Cai, Andy Tsay, Asoo Vakhtaria

In recent years, the reverse logistics channel design has gained importance due to the increased awareness and emphasis on green supply chains. To make the strategic decision, a firm should consider the consumers' physiological on remanufactured product and the cannibalization of remanufactured product on new product. We investigate the decision drivers of...
remanufacturing strategies: remanufacture in-house or outsource to a third party, considering two input factors—the difference in the cost efficiency between two strategies and heterogeneous preference of the consumers on new/remanufactured products. We analyze the impact of recycling level under two strategies, which make the recycle rate an endogenous decision variable. In addition, we compare the environmental impact and social welfare of these two strategies.

LATE CANCELLATIONS

■ MD68
3 - Optimal Investment Time in Mining Projects under Uncertainty and Competition
Leonardo Santiago

Tuesday, November 15, 2011

TA

LATE CANCELLATIONS

■ TA50
4 - Simulation-based Optimization: An Application to Generation Expansion Planning
Mike Rodgers

NEW PRESENTER

■ TA07
1 - Forecasting and Staffing Call Centers with Multiple Uncertain Arrival Streams
Han Ye

NEW SESSION CHAIR

■ TA06
Tachun Lin, Assistant Professor, Cameron University, 2800 W Gore Blvd, Lawton OK 73505, United States of America, tlin@cameron.edu

■ TA50
Marissa Hummon, National Renewable Energy Laboratory, 15013 Denver West Parkway, Golden, CO, 80401, United States of America, Marissa.Hummon@nrel.gov

TB

NEW PRESENTATION

■ TB42
4 – Inventory Monitoring in Micro-retailing
We develop a procedure for predicting out-of-stock products in a retail store using only point of sale transaction data, without inventory levels or in-bound delivery data. We postulate a Hidden Markov Model (HMM) incorporating inventory status and purchase behavior. The procedure is validated with data from micro-retailers in Mexico.
Margaret Aksoy-Pierson, Dartmouth College, Tuck School of Business, Hanover, NH, United States of America, mpierson@dartmouth.edu, Juan Chaneton, Garrett van Ryzin

LATE CANCELLATIONS

■ TB01
2 - Enhanced Indexation Based on Second-Order Stochastic Dominance
Gautam Mitra

■ TB27
1 - Operations Research and Network Science forming a Modern, Emerging Conception of Information
David Arney

■ TB33
1 - Optimal Search under Evolving Uncertainty
Jesse Pietz

■ TB69
2 - The Impact of Subjective and Objective Fit on Brand Extension Success
Irene Nahm

NEW SESSION CHAIR

■ TB27
William Fox, Naval Postgraduate School, 589 Dyer Road, Room 214, Monterey, CA, 93943, United States of America, wpfox@nps.edu

TUESDAY INTERACTIVE SESSION

NEW PRESENTATION

44 - A Link-based Approach for Evaluating Accessibility to Emergency Services in a Transportation Network
The authors utilize network science, location science and transportation-based accessibility principles to create a new performance measure to help decision-makers evaluate the relative importance of each link in a roadway network with respect to its system-wide contribution to emergency service accessibility under link disruption scenarios. The measure accounts for the spatial distribution of important / critical nodes, the topology of the road network, geographical topography and the characteristics of the road network such as road types, capacities, volumes and travel speeds. The authors demonstrate their methodology using geographic information system (GIS) mapping and travel-demand modeling software with an actual state travel demand model and road network.
David Novak, University of Vermont, Burlington, VT, United States of America, dnovak@bsad.uvm.edu, Jim Sullivan
Creating Compelling Decision Support Tools and Dashboards
Chaitanya Sagar, CEO
cs@perceptive-analytics.com

As important as a decision-support tool is the design of the tool, the ability to make the tool communicate with the executive decision maker and give the power to run what-if analyses can amplify the tool’s actual and perceived utility. This tutorial helps you be awesome at creating clinching decision support tools.

SESSION CANCELLATIONS

■ WA07
Stochastic Programming in Financial Portfolio Management
Chair: Chanaka Edirisinge

LATE CANCELLATIONS

■ WA04
Optimality Certificates in Mixed Integer Programming: From Branch and Bound to Cutting Planes
Babak Moazzez

■ WA07
1 - Stochastic Portfolio Optimization under Regime-based Firm Strength Scenarios
Chanaka Edirisinge
2 - Using Option’s Market Data in Asset Liability Management
Alan King

■ WA26
2 - Forming Effective Teams using Machine Learning and Optimization
Alexandros Nathan

WB

LATE CANCELLATIONS

■ WB05
1 - Modeling Unwanted Inflation Key Factors to Forecast Inflation
Tina Rezvanian

■ WB13
3 - Factors Influencing Collaboration Among Humanitarian Organizations: An Empirical Analysis
Mohammad Moshtari

■ WB22
1 - An Abdominal Surgery Scheduling Problem Considering Patient Condition
Joonyup Eun

■ WB35
5 - Topological Optimization on Artificial Neural Network with Application to Financial Data Forecasting
Shiye He

■ WB44
2 - Determining the Optimal Location for the Push-pull Boundary in a Supply Chain
Kathleen Iacocca

■ WB53
Transportation Network Design in Megaregions: Impact on Economic Development
Mostafa Mollanejad

NEW SESSION CHAIR

■ WB29
Erin Fahrenkopf, PhD Student, Carnegie Mellon University, 333 Morewood Ave, 7, Pittsburgh, PA, 15213, United States of America, emckinne@andrew.cmu.edu

NEW PRESENTATION

■ WB51
3 - Estimating Dynamic Network O-D Patterns with Informed Drivers: Methodology and Large-Scale Network Application
Hani Mahmassani, Professor, Northwestern University, Evanston, IL, United States of America, masmah@northwestern.edu, Ali Zockaie Kheiraie, Ying Chen
Drivers increasingly have access to real-time information but the proportion of those who rely on such information is unknown. We propose an optimization procedure to simultaneously estimate the time-dependent origin-destination trip tables for a large network along with the percentage of en-route users, given link-level traffic sensor data. The procedure is applied to the Chicago network.

WC

NEW PRESENTATION

WC54
4 - Estimating Travel Time Variability: Distinguishing Between Variability and Uncertainty Due To Measurement Errors or Ignorance
Hani Mahmassani, Professor, Northwestern University, Evanston, IL, United States of America, masmah@northwestern.edu, Jiwon Kim
This study presents a scenario-based approach to estimating travel time variability in a network, where the distribution of travel times is expressed as a mixture of scenario-specific component distributions with the scenario likelihoods as mixing weights. We consider cases where the component distributions and/or the scenario weights are unknown, letting the estimation results reflect both true variability and the uncertainty due to measurement errors or ignorance.

LATE CANCELLATIONS

■ WC08
2 – Solution Approaches to the Load Leveling Appointment
Azadeh Mobasher

■ WC26
5 – Modeling Dynamic Deployment in the Physical Internet-enabled Open Distribution Web
Helia Sohrabi

■ WC50
4 - Optimal Invoice Factoring Strategy for Cash-constrained Manufacturers
Chaocheng Gu

■ WC51
1 - Scheduling and Long-term Pricing of Electric Vehicle Charging in Parking Lots with Shared Resources
Ajay Deshpande

■ WC52
3 - Period Vehicle Routing with Stochastic Service Requests
Luis de al Torre

WD

LATE CANCELLATIONS

■ WD22
4 - Analyzing and Assessing Brain Functioning with Invariant Graph Connectivity Measures
David Phillips

■ WD43
4 – An Experimental Study of Outsourcing Through Competition
Ehsan Elahi

■ WD64
1 - Flexible Leasing Contracts in a Sustainable Fleet
Amir Hossein Ansaripoor

■ WD55
2 - Dealing With the Wickedness of Strategy
Peng Liu
NEW SESSION CHAIR

■ WD22
Elham Torabi, University of Cincinnati, 2900 Campus Green Drive, Cincinnati OH 45221, United States of America, torabiem@mail.uc.edu

■ WD55
Baris Carikci, TUBITAK, Kocaeli/ Gebze/TÜSSIDE, Istanbul, Turkey, bcarikci@yahoo.com