

2014



Transport-Tech Summit

2014 Ground Transportation Technology Symposium

Big Data and Innovative Solutions for Safe,
Efficient and Sustainable Mobility
Wednesday, November 19, 2014
9:00am - 4:30pm

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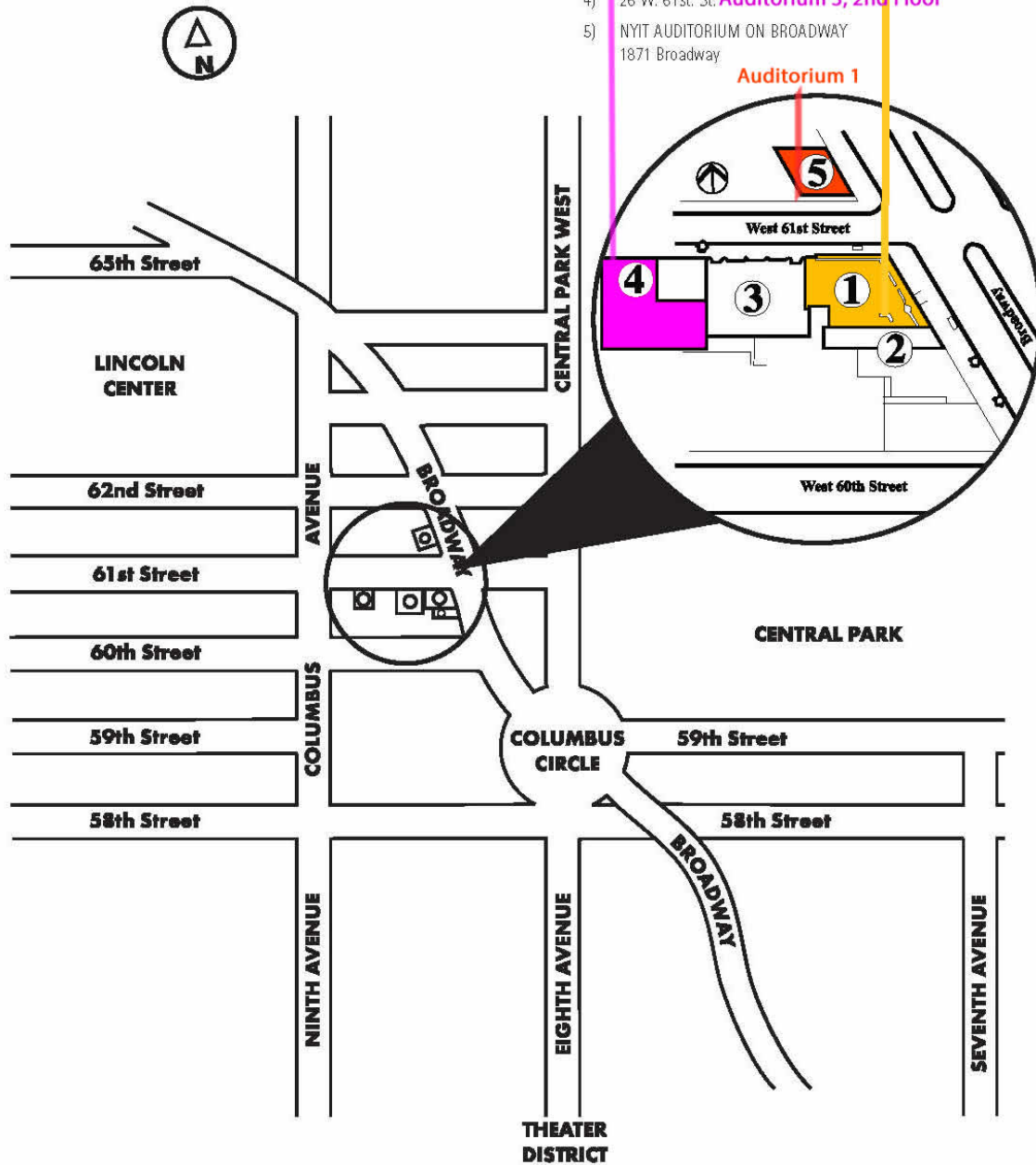
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VIA

Manhattan Campus Map

- 1) EDWARD GUILIANO GLOBAL CENTER
1855 Broadway **Auditorium 2, 11th Floor**
- 2) STUDENT ACTIVITIES BUILDING (MCSA)
1849 Broadway
- 3) NEW TECHNOLOGY BUILDING
16 W. 61st St.
- 4) 26 W. 61st St. **Auditorium 3, 2nd Floor**
- 5) NYIT AUDITORIUM ON BROADWAY
1871 Broadway **Auditorium 1**



EVENT DETAILS

2014 Ground Transportation Technology Symposium: Big Data and Innovative Solutions for Safe, Efficient and Sustainable Mobility

Camille Kamga

Director, UTRC

Matthew W. Daus

Distinguished Lecturer, UTRC

Hongmian Gong

Professor, Hunter College

Marta Panero

Director, Strategic Partnerships, NYIT

Nadia Alsam

Assistant Director for Technology Transfer, UTRC

Penny Eickemeyer

Associate Director for Research, UTRC

Mahdieh Allahviranloo

Assistant Professor, CCNY/CUNY

This unique summit will bring together leading experts, academics, practitioners, industry stakeholders and advocates to discuss the rapidly changing and expanding world of transportation technology innovative solutions. The presenters will explore the cutting-edge intelligent transportation systems, big data aggregation, and innovative transportation technology solutions to promote efficiency, safety, security and sustainability goals, as well as the impact on broader inter-modal and multi-modal transportation considerations.

The event aims to encourage future and forward thinking innovative concepts and the pragmatic political reality of various movements (such as climate change/environmental policies and safety initiatives for reduced traffic fatalities). Vision Zero will be discussed extensively, as well as the use of smartphone apps, black boxes, red light and speed cameras.

PROGRAM OVERVIEW

	Auditorium 1 1871 Broadway AoB Auditorium	Auditorium 2 1855 Broadway 11th Floor	Auditorium 3 26 W. 61st. St. 2nd Floor
8:30am – 9:00am	Registration and Breakfast		
9:00am - 9:20am	Welcoming Remarks		
9:20am - 9:45am	Introductory Remarks		
9:45am - 11:00am	Session 1 Vehicle Technology-Safety & Sustainability		
11:00am - 11:15am	Coffee Break		
11:15am - 12:30pm	Session 2 Traffic & Transit Management	Session 3 Taxicab Data Analysis & Modeling	Session 4 Big Transportation Data
12:30pm - 1:30pm	Luncheon		
1:30pm - 2:45pm	Session 5 Travel and Safety Data	Session 6 Security & Privacy	Session 7 Transportation Simulation
2:45pm - 3:00pm	Break		
3:00pm - 3:30pm	Keynote Speaker		
3:30pm - 4:30pm	Session 8 For-Hire Ground Transportation Technology-Smartphone		
4:30pm - 5:15pm	Closing Remarks & Networking Reception		

Poster Exhibition *(Posters will be displayed from 9:00 am to 4:00 pm in Auditorium 1 Foyer)*

PROGRAM DETAILS

8:30am – 9:00am **Breakfast & Registration**

9:00am – 9:20am **Welcoming Remarks**

Dr. Nada Marie Anid, Dean of School of Engineering and Computing Sciences, NYIT
Dr. Camille Kamga, Director, UTRC
Matthew W. Daus, Distinguished Lecturer, UTRC

9:20am – 9:45am **Introductory Remarks**

Honorable Ydanis Rodriguez, NYC Council Member, Chair, Transportation Committee

9:45_{AM} – 11:00_{AM}

Session 1

Auditorium 1

Vehicle Technology-Safety & Sustainability

Moderator: Robert E. Paaswell

Presenters

Carsten Kessler The EnviroCar Platform: A Decentralized Approach
in Monitoring Urban Traffic and Emissions

Promiti Dutta Innovative Applications of Wireless Charge
Transfer for Smart Vehicles

Jerome M. Lutin Application of Autonomous Driving Technology to Transit

11:00am – 11:15am **Break**

Poster Exhibition

Auditorium 1

(Posters will be displayed from 9:00 am to 4:00 pm in Auditorium 1 Foyer)

Reuben M. Juster

Severe Weather Performance Monitoring

David King

Asymmetric Travel Demand by Mode: Implications for Policy

Kyriacos C. Mouskos

Implementing Eco-routing using Dynamic Traffic Assignment for the
Austin, TX and Nicosia, Cyprus Networks

William Riddell

A Framework for Quantifying Commutes within New Jersey

Shenuque Tissera

Econometric Testing of Male & Female Seasonality Patterns
in the CitiBike Program

Patricio Vicuna

Lane Closure Analysis Using Data Warehouse: OLAP

Shu-Yuan Wu

A Transit Signal Priority Simulation Model Using Bus Health Data

PROGRAM DETAILS

11:15 – 12:30_{PM}

Session 2

Auditorium 1

Traffic & Transit Management

Moderator: Camille Kamga

Presenters

Candace Brakewood	The Impact of Real-Time Information on Bus Ridership in NYC
Hidyuki Kobayshi	A study of Feedback-based Traffic Flow Control Using Estimated Traffic Congestion
Vassillis Papayannoulis	Urban Mobility Management, Planning & Operations with Big Data
Nicholas E. Lowness	A Public Transportation System Performance Measurement Web Application

Session 3

Auditorium 2

Taxicab Data Analysis & Modeling

Moderator: Matthew W. Daus

Presenters

Anil Yazici	Extracting the Most from Urban Data: Multi-perspective Analysis of NYC Taxi Trips
David King	Where Were Bike Share Trips Before Bike Share? Evidence from New York City
Kenneth Esirim	Where Can I Find my Next Passenger?

Session 4

Auditorium 3

Big Transportation Data

Moderator: Sabiha Wadoo

Presenters

Andrew Weeks and Stanislav Parfenov	NYCDOT's Experience with Big Data & Use in Various Transportation Projects
Wuping Xin	Real-Time Big Data Management Architect for Adaptive Traffic Signal
Nikhil Puri	Using Innovative Data in Transport Planning & Modeling
Kaan Ozbay	Using Big Data to Identify Hotspots of Pedestrian Crashes in Manhattan

12:30pm – 1:30pm **Luncheon**

PROGRAM DETAILS

1:30_{PM} – 2:45_{PM}

Session 5

Auditorium 1

Travel and Safety Data

Moderator: Hongmian Gong

Presenters

Chris Brogan	AssureNet
Hong Yang and Kaan Ozbay	Development of a Data-Driven Approach for Identifying Secondary Crashes
John Bullough and Mark Rea	Intelligent Warning Beacon Design for Maximizing Worker & Driver Safety
Hongmian Gong	Handling Travel Data with Geospatial Technologies

Session 6

Auditorium 2

Security & Privacy

Moderator: Sarah M. Kaufman

Presenters

Reuben Juster	Traffic Detector Sensor Analytics & Visualization of Performance Measures
Timothy Michalowski	Safeguarding Confidentiality in GPS Travel Data Collection
Tarek Saadawi	Denial of Service Attack Detection in Internet-Connected Vehicles

Session 7

Auditorium 3

Transportation Simulation

Moderator: Mahdieh Allahviranloo

Presenters

Felisa Vázquez-Abad	A View to Future Mathematical Modeling for Transportation Systems
Michalis Xintarakis	Analyzing and Visualizing Mobility using Observed and Simulated Trajectories
Reuben Juster	Vehicle Probe Project 2, the Next Generation

2:45pm – 3:00pm **Break**

3:00pm – 3:30pm **Keynote Speaker**

Dr. Amen Ra Mashariki, NYC Chief Analytics Officer, NYC Mayor's Office

3:30_{PM} – 4:30_{PM}

Session 8

Auditorium 1

For-Hire Ground Transportation Technology- Smartphone Applications & Ride sharing

Moderator: Matthew W. Daus

Presenters

Avik Kabessa	Carmel Car & Limousine Service: Increasing Transport Efficiencies via the Carmel App
Daniel Ramot	VIA - On-Demand Transit
Ron Srebro	GetTaxi App

4:30pm – 5:15pm **Closing Remarks & Networking Reception**

Morning Keynote



Hon. Ydanis Rodriguez

NYC Council Member
Chair, Transportation Committee

Council Member Rodriguez is an experienced member of the NYC Council's Transportation Committee, and now presides as its Chairman, where he conducts oversight over several transportation related government agencies, including the Metropolitan Transportation Authority, the NYC Department of Transportation, and the NYC Taxi and Limousine Commission (TLC). Council Member Rodriguez recently oversaw the passage of ground-breaking legislation relating to Vision Zero and the plan to use technology and other initiatives to reduce traffic fatalities. As a graduate of The City College of New York, where the UTRC resides, Council Member Rodriguez knows the ground transportation industry well, having worked early in his career as a TLC licensed for-hire vehicle driver.

Read More at: <http://council.nyc.gov/d10/html/members/biography.shtml>

Afternoon Keynote



Dr. Amen Ra Mashariki

NYC Chief Analytics Officer
NYC Mayor's Office

Dr. Amen Ra Mashariki is the City's Chief Analytics Officer and leads the Mayor's Office of Data Analytics (MODA). Dr. Mashariki is an accomplished leader within government, private sector and academia with experience in bringing Big Data processing and analytics for large and complex data management efforts. He started his professional careers as a software engineer at Motorola working on over-the-air data transmission projects and led a team of user-interface developers to build components of security features for handheld devices. Most recently, Dr. Mashariki served as Chief Technology Officer at the U.S. Office of Personnel Management.

Dr. Mashariki previously worked at the Johns Hopkins Applied Physics Lab as a computer scientist and research scientist where he led a team working on data mining and data fusion projects in the bioinformatics domain. Prior to that, he served as Assistant Director of Informatics at the University of Chicago Comprehensive Cancer Research Center and taught computer science courses at Hong Kong University of Science and Technology, and robotics at Northwestern University.

Dr. Mashariki holds a Doctor of Engineering from Morgan State University, a Master of Science in Computer Science from Howard University, and a Bachelor of Science in Computer Science from Lincoln University. Amen is a Brooklyn native and attended Brooklyn Tech High School.

Read More at: <http://www.nyc.gov/html/analytics/html/about/leadership.shtml>

1



Robert E. Paaswell

Distinguished Professor
The City College of NY, CUNY

2



Crasten Kessler

Assistant Professor
Hunter College, CUNY

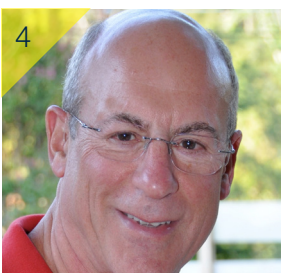
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Promiti Dutta

Assistant Professor
Columbia University

4



Jerome M. Lutin

Retired, Distinguished Professor
New Jersey Institute of Technology

1

Dr. Robert Paaswell is a Distinguished Professor of Civil Engineering at the City College of New York, the flagship institution of The City University of New York (CUNY). He served as its Interim President from 2009-2010. He is the emeritus Director of the College's University Transportation Research Center, Region II and the founding Director (2001-present) of the CUNY Institute for Urban Systems (CIUS). He is also Site Director of the new NSF sponsored Industry/University Cooperative Research Center: Sustainably Integrated Buildings and Sites Center. A civil engineer and former CEO of the Chicago Transit Authority, Dr. Paaswell is an internationally recognized expert in public transportation issues and consulting. Dr. Paaswell is a Distinguished Member of the American Society of Civil Engineers.

2

Carsten Kessler is an Assistant Professor for Geographic information Science at the Department of Geography at Hunter College – CUNY in New York and Associate Director of the Center for Advanced Research of Spatial Information. He is one of the organizers of the Linked Science workshop series and co-chairing the W3C Emergency Information Community group. Before moving to New York in fall 2013, he was a post-doc researcher at the Institute for Geoinformatics, University of Munster, Germany and a consultant for the United Nations office for the Coordination of Humanitarian affairs in Geneva, Switzerland. His research interests include the use of volunteered geographic information and semantic web technologies to monitor and model urban environments.

3

Promiti Dutta is an engineering doctoral candidate at Columbia University. Currently a researcher at the Center for Computational Learning Systems, she has a bachelor's degree in chemical engineering, a master's degree in public health as well as electrical engineering from Columbia University.

Her research interests are in the application of networking, communication, and machine learning algorithms towards the integration of electric vehicles and other technologies in the smart grid.

4

Jerome M. Lutin retired from positions as Distinguished Research Professor at New Jersey Institute of Technology and as Senior Director of Statewide and Regional Planning at New Jersey Transit. Dr. Lutin has 48 years of professional experience in transportation. At NJ TRANSIT, he also served as Senior Director of Planning Research and Development. In that position he was responsible for the agency's pilot projects of new technologies. Dr. Lutin is a Fellow of the Institute of Transportation Engineers. He has been actively involved in the development of ITS standards for the transit industry and teaches a course on standards for the National Transit Institute. Dr. Lutin holds a Bachelor of Arts from Trinity College, a Master of Architecture and Urban Planning and PhD in Urban Planning both from Princeton University. He is a licensed professional engineer and a certified planner.

1



Camille Kamga

Director, UTRC & Assistant Professor, The City College of NY, CUNY

2



Candace Brakewood

Assistant Professor
The City College of NY, CUNY

3



Hidyuki Kobayashi

Assistant Professor, National Institute of Technology, Sendai Campus, Hirose College, Japan

4



Vassilis Papayannoulis

Principal
Metropia Inc.

5



Nicholas E. Lowness

Associate Professor
University of Connecticut

Camille Kamga is Director for the University Transportation Research Center (UTRC) and an Assistant Professor of Civil Engineering at The City College of New York. As a consortium of 18 major U.S. academic institutions, UTRC asserts a significant role in the Federal Region 2 and nationally, conducting research and projects on surface transportation, carrying out training and educational programs and actively disseminating the results of its work. It is one of the few such Centers in the U.S. federally designated since 1987.

Dr. Kamga is a member of the TRB's Urban Transportation Data and Information Systems Committee (ABJ30). He serves in the Board of Director of the Intelligent Transportation Society of NY – a professional group providing education and outreach to foster the understanding of ITS applications and technologies. He is also a member of Education and Research Committee of the International Association of Transportation Regulators. He holds a Ph.D. in Civil Engineering from the Graduate Center of the City University of New York, specializing in Intelligent Transportation Systems (ITS). He is the 2006 recipient of the National Pikarsky Award for Outstanding Dissertation in Science and Technology from the Council of UTC.

Candace Brakewood is an Assistant Professor in the Department of Civil Engineering at the City College of New York. Her research focuses on understanding how new information and communication technologies can be used to improve public transportation systems. Recently, she has conducted studies to evaluate the impacts of real-time information on transit ridership, and she has worked in the area of new fare payment systems. Candace has a PhD in Civil Engineering

from Georgia Institute of Technology, dual Master of Science degrees in Transportation and Technology Policy from Massachusetts Institute of Technology, and a Bachelor of Science in Mechanical Engineering from Johns Hopkins University.

3

Hideyuki Kobayashi

received his B.E and M.E degrees in knowledge-based Information Engineering from Toyohashi University of Technology, Toyohashi, Japan in 2005 and 2007. He received his Ph.D degrees in Shizuoka University in 2011. Presently, he is an Assistant Professor of National Institute of Technology, Sendai Campus, Hirose College, Japan.

4

Vassilis Papayannoulis

is a Principal of Metropia, Inc., a transportation technology and consulting firm headquartered in Tucson, AZ with offices in Tucson, Austin and New York City. Dr. Papayannoulis technical knowledge and in-depth understanding of the issues pertaining to traffic operations has engaged him in numerous technical studies that range from analyzing localized operations at work zones to traffic operations pertaining to land development (EIS'), multi-modal corridors and large scale complex transportation networks. Dr. Papayannoulis has held leading technical and management roles in a number of regional projects including NYSDOT's Bronx Arterial Needs, NYMTC's Canal Area study, NJDOT's I-80/US 23/Rt.46 Interchange study and PANYNJ's West Midtown Bus Storage study. His technical knowledge and in-depth understanding of the issues pertaining to transportation system operations, transportation data and performance measures has engaged him to regional and national pioneering projects including NYMTC's Best Practice Model, NYCDOT's Manhattan Traffic Model, FHWA's Integrat-

ed Corridor Management (ICM) project and SFCTA's DTA study. Recently he has been engaged in technologies supporting ATDM and real-time applications and frameworks incorporating mesoscopic transportation models.

5

Nicholas Lowness is an

Associate Professor at the University of Connecticut (UConn) in the Department of Civil and Environmental Engineering. He earned his PhD in August 2007 from The University of Texas at Austin and joined the faculty at the UConn immediately afterwards. In 2010 he became director of the Center for Transportation and Livable Systems. In 2012 he was named F.L. Castleman Professor in Engineering Innovation. Dr. Lowness was honored as an Eno Fellow in 2006, received the 2007 SWUTC Outstanding PhD Student of the Year, the 2009 C.R. Klewin, Inc. Excellence in Teaching Award and the Provost's Award for Excellence in Public Engagement in 2013. He has authored or co-authored over sixty journal articles and refereed conference proceedings. His research interests include public transportation systems, transportation networks and transportation data management.

1



Matthew W. Daus

Distinguished Lecturer, UTRC
President, International Association of Transportation Regulators

2



Anil Yazici

Assistant Professor
Stony Brook University, SUNY

3



David King

Assistant Professor
Columbia University

4



Kenneth Esirim

Doctoral Student and Researcher
Graduate Center, CUNY

1 Matthew W. Daus, Esq.

currently serves as a Distinguished Lecturer at the City University of New York's (CUNY) Transportation Research Center of The City College of New York. Professor Daus conducts research and is extensively published as an expert on ground transportation regulation and technology. He teaches courses on transportation history, policy, sustainability, for-hire regulation and technology. Mr. Daus also continues to serve as President of the International Association of Transportation Regulators (IATR), a non-profit educational and advocacy peer group of government transportation regulators from around the world promoting best regulatory practices. Mr. Daus is the longest serving Chairman of the New York City Taxi and Limousine Commission (TLC), serving for 8 ½ years. Prior to his tenure as Commissioner, Mr. Daus served in executive positions in NYC government for almost 16 years at several agencies including as General Counsel to the TLC and the NYC Community Development Agency, as Special Counsel to the TLC and NYC Trade Waste Commission, and as a NYC Human Rights Prosecutor. Mr. Daus is a partner and currently chairs the Transportation Practice Group at Windels Marx Lane & Mittendorf, LLP.

2

Anil Yazici is an Assistant Professor of Civil Engineering at Stony Brook University. Previously, he worked as research associate at University Transportation Research Center, at The City College of New York. His research interests are probabilistic analysis of transportation networks, urban data analytics, emergency management, and intelligent transportation systems. He has worked on numerous emergency evacuation and traffic incident management projects for New Jersey and New York, and recently his research focuses on urban data science, smart cities, and use of new media technologies in transportation. Dr. Yazici received his B.S. and M.S. degrees in Civil Engineering from Bogazici University, Istanbul, Turkey, and his M.S. in Operations Research and Ph.D. in Civil and Environmental Engineering from Rutgers University.

3

David King is an Assistant Professor of Urban Planning at Columbia University. His research explores the impact of local transportation planning on the built environment, public finance and accessibility. As part of this research he has written about the phenomenon of cruising for parking and used spatial regression techniques to analyze travel behavior. He also studies how public policy influences the adoption of new technologies to address congestion, energy and environmental concerns. These issues are the focus of Professor King's teaching through his courses covering planning techniques and methods, transportation and land use planning and transport policy.

4

Kenneth Ezirim is a doctoral student and researcher with the Department of Computer Science at the Graduate Center City University of New York. Kenneth received his Bachelor's and Master's degrees in Computer Science and Engineering from Southwest Technical University, Russia in 2006 and 2008 respectively. Kenneth also has a Master of Philosophy degree from the Graduate Center, CUNY. His current research interests include: Wireless Network Communication, Cognitive Radio Networks, Social Networks, Data Mining, Machine Learning and Game Theory.

SESSION 4 SPEAKERS

Moderator

1



Sabiha Wadoo

Assistant Professor
New York Institute of Technology

2



Andrew Weeks

Director of the Modeling & Data
Analysis Unit at NYCDOT

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Stanislav Parfenov

Transportation Engineer & Data
Analyst, NYCDOT

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Wuping Xin

Chief Technology Officer
KLD Engineering, P.C.

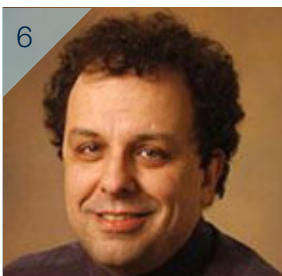
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Nikhil Puri

Regional Manager
Cambridge Systematics

6



Kaan Ozbay

Professor, New York University

Sabiha A. Wadoo received the B.E degree in electrical engineering from Regional Engineering College (NIT), Srinagar, India in 2001. She received the M.S degree in Electrical Engineering, the M.S degree in Mathematics and the Ph.D. degree in Electrical Engineering from Virginia Tech, Blacksburg, USA, in 2003, 2005 and 2007 respectively. Her Ph.D. dissertation was on evacuation distributed feedback control and abstraction for pedestrians. Since 2007 she has been with New York Institute of Technology, Old Westbury, New York, USA, where she is an Assistant Professor with the Electrical and Computer Engineering Department.

Her research interests are in the area of non-linear control systems, applications of control in vehicular and pedestrian transportation systems, robotics and mathematical analysis and control of complex systems. She is the author of two books and several journal and IEEE peer reviewed conference papers in the area of control systems and advanced control techniques for transportation systems. She is also an Associate Editor of IEEE Transactions on Intelligent Transportation Systems.

Andrew Weeks is the director of the Modeling & Data Analysis unit at NYCDOT. He has over 10 years of professional experience in transportation planning, traffic engineering, modeling and analysis. Andrew is responsible for administrative, project management and analytical tasks

performed by his unit, in addition to oversight of New York City Department of Transportation models currently under development by agency consultants, including review of consultant modeling methodologies, results and deliverables.

3

Stanislav Parfenov,

GISP, is a transportation engineer and data analyst at New York City Department of Transportation (NYCDOT). Stanislav focuses on analysis of travel patterns, traffic mitigation, special events analytics and effective data visualization techniques.

4

Wuping Xin is the CTO of KLD Engineering, P.C., a New York – based consulting firm focusing on ITS, Traffic Simulation and Modeling, and Emergency Evacuation Planning. Dr. Xin has a master's degree in Civil Engineering from University of Minnesota and PhD degree in Traffic Engineering from New York University. In recent years, his work has been focused on R&D of adaptive traffic signal control system and real-time big data management for regional ITS applications. He is the system architect of the ACDSS adaptive control system deployed in New York City and other states.

5

Nikhil Puri is Regional Manager of the Travel Demand Forecasting Practice in the NY Region, with 13 years of experience in transportation planning and travel demand forecasting. He has worked on regionally significant studies including environmental impact statements, alternatives analyses, economic impact and toll impact studies, and long range planning efforts, dealing with both transit and highway issues. Mr. Puri has expertise in analyzing, interpreting, and communicating complex model results to audiences that range from technical experts and decision-makers to the public. Prior to

joining Cambridge Systematics, Mr. Puri led a team of transportation modelers on amongst two of the largest regional multimodal transportation planning projects in the New York metro region. Mr. Puri served on the Travel Model Review Program-sponsored NYMTC Travel Demand Model Peer Review panel in April 2012.

6

Kaan M.A. Özbay joined Department of Civil and Urban engineering and Center for Urban Science and Progress (CUSP) at NYU on August 2013. Professor Ozbay was a tenured full Professor at the Rutgers University Department of Civil and Environmental Engineering until July 2013. He joined Rutgers University as an Assistant Professor in July, 1996. In 2008, he was a visiting scholar at the Operations Research and Financial Engineering (ORFE) Department of Princeton University.

Dr. Ozbay's research interests in transportation cover a wide range of topics including the development of simulation models of large scale complex transportation systems, advanced technology and sensing applications for Intelligent Transportation Systems, modeling and evaluation of traffic incident and emergency management systems, feedback based on-line real-time traffic control techniques, traffic safety, application of operations research techniques in network optimization and humanitarian inventory control, and transportation economics.

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Hongmian Gong

Associate Professor
Hunter College, CUNY

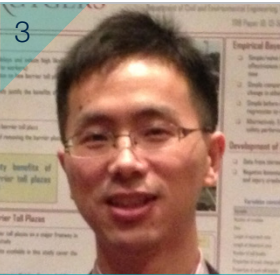
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Chris Brogan

Founder and Chairman
AssureNet

3



Hong Yang

Post-doctoral Fellow
CUSP, New York University

1

Hongmian Gong has been an Associate Professor of Geography at Hunter College of the City University of New York since 1998 and an Associate Professor of Earth and Environmental Sciences at the Graduate Center of the City University of New York since 2003. She holds a Ph.D. in Geography from the University of Georgia, M.A. in Urban Studies from the University of Akron, and B.S. and M.S. in Geography from Zhongshan University, China. Last year, Dr. Gong established a research cluster team on GPS for Transportation at UTRC2 (<http://www.geography.hunter.cuny.edu/~hgong/GPS/ClusterTeam.htm>) and organized a GPS for Transportation Symposium in New York City (program and presentation videos available at <http://www.geo.hunter.cuny.edu/~hgong/GPS/Symposium.htm>). To fund her research, Dr. Gong has obtained over \$500K from various sources such as University Transportation Research Center, New York Metropolitan Transportation Council, and Research Grants Council of Hong Kong.

2

Chris Brogan is a founder and Chairman of AssureNet. Prior to AssureNet, he was the founder and President of FleetRisk Advisors and a founder of telematics pioneer Safety Intelligence Systems funded by ISO, the leading provider of insurance data. Chris and the AssureNet team are well known within the transportation and insurance industries for delivering insurance and telematics-driven services that reduce the frequency and severity of loss. At FleetRisk Advisors – the leading predictive analytics telematics company – Chris and his team developed TRAC – Transportation Risk Analytics Center – which was licensed by Qualcomm and marketed as Qualcomm's Predictive Performance System™, a proven life-saver, keeping fatigued and impaired drivers off our high-

ways, and increasing fleet and underwriting profitability. FleetRisk Advisors was acquired by Qualcomm. Chris served as a Naval Aviator for eight years, received a B.S.E.E. from Manhattan College and attended Columbia University's EMBA Program.

3

Hong Yang is a Post-doctoral Fellow in the Department of Civil & Urban Engineering and the Center for Urban Science and Progress (CUSP) at New York University (NYU). He holds a Ph.D. degree (2012) in Civil Engineering and a Master degree (2010) in Statistics from Rutgers, The State University of New Jersey, and a Master degree (2007) in Transportation Planning and Management from Tongji University. His academic and professional activities and interests span a number of areas such as transportation safety, intelligent transportation systems, traffic operation and simulation modeling, incident and emergency management, and transportation planning. He is also actively involved in urban informatics and big data mining in transportation systems. Dr. Yang is the author and co-author of a number of scientific publications in journals and conference proceedings.

4

John Bullough is a senior research scientist and adjunct faculty member at the Lighting Research Center, Rensselaer Polytechnic Institute in Troy, NY. John manages the center's research program in transportation lighting and safety, and teaches in Rensselaer's graduate programs in lighting. His research interests include pedestrian safety and security, human factors and driving safety, and mitigating light pollution. He is a member of the Society of Automotive Engineers, serves as chairman of the Transportation Research Board's Committee on Visibility, and in 2005 was elected

a Fellow of the Illuminating Engineering Society. John has written or co-written more than 350 articles and technical publications on lighting, more than 60 of those with students.

5

Mark Rea has served as Director since the LRC was established in 1988. He teaches courses in leadership and in visual and circadian processes, and supervises graduate students at M.S. and Ph.D. levels. Rea is well known for his research in circadian photobiology, mesopic vision, psychological responses to light, lighting engineering, and visual performance. He is the author of more than 250 scientific and technical articles, and was the editor-in-chief of the 8th and 9th editions of the Illuminating Engineering Society of North America (IESNA) Lighting Handbook. Dedicated to the notion that our society undervalues light because we do not properly measure its benefits, his recent book Value Metrics for Better Lighting brings together a wide range of research to illustrate how the effective use of light can benefit society and the environment.



John Bullough

Senior Research Scientist
Rensselaer Polytechnic Institute



Mark Rea

Director, Lighting Research Center
Rensselaer Polytechnic Institute

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Sarah M. Kaufman

Digital Manager & Adjunct Asst. Professor, Rudin Center, NYU

2



Reuben Juster

Faculty Research Assistant
CATT, University of Maryland

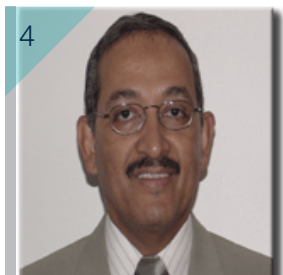
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Timothy Michalowski

Senior Statistical Analyst / Geographic Information Systems (GIS)

4



Tarek Saadawi

Director, Center of Information Networking and Telecommunication, CCNY/CUNY

1

Sarah M. Kaufman is Digital Manager and Adjunct Assistant Professor of Planning at the Rudin Center. Sarah focuses on the use of cutting-edge information technologies in transportation communications, particularly the implementation of open data and social media programs. Before earning her MUP at NYU Wagner and MBA at NYU Polytechnic, Sarah studied science writing at Washington University in St. Louis. Sarah also serves as a Director-at-Large on the board of the Women's Transportation Seminar.

2

Reuben Juster is a faculty research assistant at the University of Maryland's Center for Advanced Transportation Technology (CATT). Since his beginning at CATT, he has been heavily involved in the management of the Vehicle Probe Project II (VPPII), supported the I-95 Corridor Coalition, and participated with the Metropolitan Area Transportation Operations Coordination (MATOC) Transit Task Force (TTF). He has published and presented several papers on arterial performance measures and automated transit networks. He is active in many organizations including several committees of the Transportation Research Board (TRB), the Advanced Transit Association (ATRA), and Toastmasters. Reuben received a BS in civil engineering from California Polytechnic State University San Luis Obispo, and a MS in civil engineering from the University of Maryland.

3

Timothy Michalowski directs the Geographic Information Systems (GIS) activities for Abt SRBI as part of the company's Advanced Methods Group, and has over a decade of experience in GIS. Before joining Abt SRBI in 2010, he managed many GIS projects at government agencies, including the Puget Sound Regional Council (PSRC) in Seattle, WA and the Department of Transportation in New York City (NYCDOT).

His focus at Abt SRBI is on the expanded use of GIS technology for social and survey research for data collection, sample plans, geocoding, web-based mapping applications, spatial analysis, data visualization, and other purposes. Abt SRBI has utilized GIS in recent projects for the U.S. Department of Housing and Urban Development (HUD), National Oceanic and Atmospheric Administration (NOAA), New York City Economic Development Corporation (NYCEDC), Southern California Association of Governments (SCAG), Delaware Valley Regional Planning Commission (DVRPC), U.S. Agency for International Development (USAID) and Long Island Railroad (LIRR).

Michalowski has a master's degree in Urban Planning & Policy (MUPP), with a focus on GIS, from the University of Illinois in Chicago (UIC). He has presented at various national conferences on the use of GIS for social research, including publishing an Abt SRBI webinar on the use of "Geographic Based Statistics for Survey Research".

4

Tarek Saadawi is the Director of the Center of Information Networking and Telecommunications (CINT) at the City University of New York, City College. He is a co-editor of the book "Cyber Infrastructure Protection," Strategic Study Institute, volume 1, May 2011, Volume 2 May 2013, and volume 3 (expected Dec 2014), the Lead-author of the book, Fundamentals of Telecommunication Networks," John Wiley & Sons, 1994 (which has been translated into Chinese), and he has published extensively in the information networking field. He's the co-Chair and co-Organizer of NSF-funded first "US - Egypt Workshop on Cyber Security," Cairo-Egypt, May 27-30, 2013.

1



Mahidieh Allahviranloo

Assistant Professor
The City College of NY, CUNY

2



Felisa Vazquez-Abad

Professor
Hunter College, CUNY

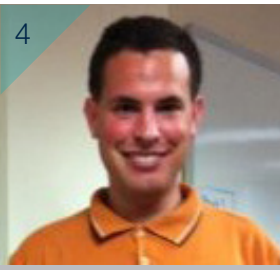
3



Michalis Xyntarakis

Senior Associate
Cambridge Systematics

4



Reuben Juster

Faculty Research Assistant
CATT, University of Maryland

1

Mahdieh Allahviranloo

is Assistant Professor at the Department of Civil Engineering, The City College of New York. Her research interests are travel demand and behavior, learning and mining travel patterns, urban operations research, network modeling, and Bayesian econometrics. She is currently working on mining and clustering activity pattern trajectories, data visualization and network modeling under extreme modeling.

2

Felisa Vazquez-Abad

is currently a Professor of Computer Science at Hunter College. Her research lies at the intersection between mathematics, engineering and computer science. She is mainly interested in the optimization of complex systems under uncertainty, primarily to understand, control and / or build efficient self-regulated learning systems. She obtained a B.Sc. in Physics in 1983 and a M.Sc. in Statistics and Operations Research in 1984 from the Universidad Nacional Autónoma de México. In 1989, she obtained a Ph.D. in Applied Mathematics from Brown University. After four years doing postdoctoral research at Brown University and later at the INRS-Telecommunications in Montreal, Canada, she became a professor of computer science at Université de Montréal, Canada in 1993. In 2004, she became a professor of mathematics and statistics at the University of Melbourne, Australia, until 2009, when she accepted the position at CUNY. She is the founder and executive director of the CUNY Institute for Computer Simulation, Stochastic Modeling and Optimization.

3

Michalis Xyntarakis

is a Senior Associate with Cambridge Systematics with 10 years of experience in simulation, travel demand modeling, and software development. He has been the technical leader in several pioneering simulation studies that model mobility at the regional and corridor level and he is currently the principal investigator in FHWA's trajectory validation project. As a software engineer he has programmed many state-of-the-practice pathfinding algorithms and he has been a frequent presenter at TRB on the topics of simulation, software, and data.

4

Reuben Juster

is a faculty research assistant at the University of Maryland's Center for Advanced Transportation Technology (CATT). Since his beginning at CATT, he has been heavily involved in the management of the Vehicle Probe Project II (VPPII), supported the I-95 Corridor Coalition, and participated with the Metropolitan Area Transportation Operations Coordination (MATOC) Transit Task Force (TTF). He has published and presented several papers on arterial performance measures and automated transit networks. He is active in many organizations including several committees of the Transportation Research Board (TRB), the Advanced Transit Association (ATRA), and Toastmasters. Reuben received a BS in civil engineering from California Polytechnic State University San Luis Obispo, and a MS in civil engineering from the University of Maryland.

SESSION 8 SPEAKERS

Moderator

1



Matthew W. Daus

Distinguished Lecturer, UTRC
President, International Association
of Transportation Regulators

1

Matthew W. Daus, Esq.

currently serves as a Distinguished Lecturer at the City University of New York's (CUNY) Transportation Research Center of The City College of New York. Professor Daus conducts research and is extensively published as an expert on ground transportation regulation and technology. He teaches courses on transportation history, policy, sustainability, for-hire regulation and technology. Mr. Daus also continues to serve as President of the International Association of Transportation Regulators (IATR), a non-profit educational and advocacy peer group of government transportation regulators from around the world promoting best regulatory practices. Mr. Daus is the longest serving Chairman of the New York City Taxi and Limousine Commission (TLC), serving for 8 ½ years. Prior to his tenure as Commissioner, Mr. Daus served in executive positions in NYC government for almost 16 years at several agencies including as General Counsel to the TLC and the NYC Community Development Agency, as Special Counsel to the TLC and NYC Trade Waste Commission, and as a NYC Human Rights Prosecutor. Mr. Daus is a partner and currently chairs the Transportation Practice Group at Windels Marx Lane & Mittendorf, LLP.

2

Avik Kabessa

has been in the ground transportation industry for over 30 years running Carmel Car & Limousine Service. An ideas man, Avik expanded Carmel from a local NYC car service company to worldwide enterprise. Servicing over 300 locations across the country and world, Carmel continues to expand its reach in providing exemplary car service at an affordable rate.

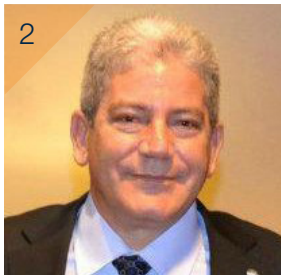
Continuing his pattern of innovation, Avik created the Carmel Limo Smartphone App, up until recently, the first and only American Ground Transportation app to be licensed by local government with the St. Louis Metropolitan Taxicab Commission. Avik is founding board member of the Livery Roundtable (LRT), a non-profit organization working with and on behalf of the livery industry in NYC. He is also a board member of the Taxi Limousine and Paratransit Association (TLPA), and the Chairman of the New York State Independent Livery Benefit Fund, also known as the Livery Workers Compensation Fund that provides coverage to over 24,000 licensed livery drivers across New York City.

4

Ron Srebro

is the CEO of Gett USA and is responsible for the growth and development of the company in NY. Prior to this position, Srebro led GetTaxi's innovation where he helped to continually innovate GetTaxi's design and bring to the market the next generation of products. Srebro calls upon over 14 years of programming experience and among his many technological specialties are experiments with context-aware application designs.

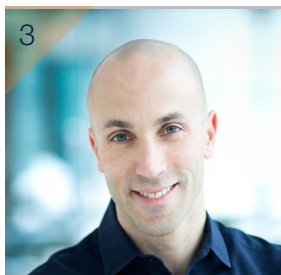
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Avik Kabessa

CEO, Carmel Car and Limousine
Service

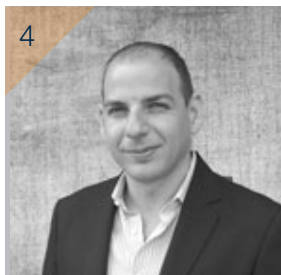
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Daniel Ramot

Co-founder and CEO
VIA

4



Ron Srebro

CEO, Gett USA

3

Daniel Ramot

is the Co-founder and CEO of Via, a smart transit system currently being deployed throughout NYC. Prior to Via, Daniel was a Director at D. E. Shaw Research, where he oversaw the development and operation of supercomputers designed to discover new pharmaceutical drugs. Daniel received a PhD in neuroscience from Stanford University and is a graduate of the elite Israel Defense Forces' Talpiot program.

Asymmetric Travel Demand by Mode: Implications for Policy

Author(s): David A. King (corresponding author)

Assistant Professor of Urban Planning

Graduate School of Architecture, Planning and Preservation, Columbia University

Jonathan R. Peters

Professor of Finance, College of Staten Island, City University of New York

Transportation planning uses models to estimate demand for transportation by mode. These models rely on a number of assumptions and in nearly all cases frame travel mode choices as one between autos and transit. Mode choice decisions made at the margin are generally used for all trips on a journey. For instance, someone who leaves home as a driver will eventually return home as a driver, and all trips made in between will be driving trips. This can be considered symmetric travel demand by mode, where the mode of all trips is determined by the mode choice of the first trip. Yet in many transit oriented cities travel mode choice is not symmetric, and travelers use multiple modes for each journey. This is an understudied area of personal travel, and one that is difficult to observe. In this research we examine asymmetric demand for travel using data collected from New York City taxicabs.

Taxi services are critical aspects of urban transportation systems. Taxicabs serve the public in a variety of ways, from metered fares to informal jitneys, and provide critical mobility for people of all income levels. Despite the ubiquity of taxi service in cities, there is limited scholarly research that explores how people use taxi service to support transit-oriented lifestyles and enhance mobility, and there is scant research exploring the complementary aspects of taxi service for conventional transit. In this paper we argue that taxi service is a critical aspect of a transit system, and taxi usage exhibits complementary characteristics to conventional transit. Specifically, taxi usage is asymmetrical where origins and destinations have very different spatial distributions. This suggests that taxi riders have multi-modal travel journeys. In many cases taxi trips are part of journeys that began with transit trips, yet planning and expanding taxi service as an extension of transit networks is rarely undertaken in practice. We use regulatory and Global Positioning System (GPS) data from New York City as a case to demonstrate the asymmetrical nature of taxi usage and innovative regulatory approaches that foster high rates of taxi usage that complement transit ridership.

Implementing Eco-routing using Dynamic Traffic Assignment for the Austin, TX and Nicosia, Cyprus Networks

Author(s): Kyriacos C. Mouskos, Ph.D., Research Professor, CCNY-CUNY, and Director, CTL Cyprus

Transport Logistics Ltd., Nicosia Cyprus

Natalia Ruiz-Juri, Ph.D., Research Fellow, Ehsan Jafari, Research Assistant (RA), Michael Levin (RA), The University of Texas at Austin, Austin, TX

Patricio Vicuna F., Ph.D. Candidate, CCNY-CUNY; Nikos Bentenitis, Ph.D., Senior Scientist, CTL Cyprus
Transport Logistics Ltd., Nicosia Cyprus,

We present the use of Dynamic Traffic Assignment (DTA) to model multiple classes of users through a generalized cost function that includes tolls, travel time and fuel consumption. Fuel consumption is modeled as a flow-dependent link toll, and the he Visual Interactive System for Transport Algorithms DTA model was modified accordingly. The extended model was implemented in a large regional network (Nicosia, Cyprus) and a small but dense grid-type network (downtown Austin, Texas). Two classes of vehicles: fuel-consumption conscious and travel-time conscious were modeled, each basing their routing decisions on a single link attribute. A set of parametric analyses were conducted by varying the percentage of the two vehicle classes. For a market penetration ranging between 5% and 100%, we observed network fuel consumption reductions reduces between 0.3 to 2.5%, and a total system travel time decrease between 0.4 and 2% in the downtown Austin network. Similar trends were observed in the Nicosia network. The results point to a converging Dynamic User Equilibrium and a trend towards a system optimal solution. Further, they provide an incentive for policy makers to consider incentives for energy conscious drivers such that the overall network energy and travel time is reduced simultaneously. This model was developed under the European Commission sponsored project called REDUCTION (9/2011-8/2014).

A Framework for Quantifying Commutes within New Jersey

Author(s): William Riddell (corresponding author)

Daniel Bailey¹, Jason Shaub¹, Gary Haes¹, Jenna Ledig¹, William Weldon¹, Neil McCall², William Riddell³, Krishan Bhatia³. (1Undergraduate Student 2Graduate Student 3Associate Professor)

College of Engineering, Rowan University

A database to quantify commuting trips in New Jersey is being developed as part of an effort to establish a model capable of evaluating the effect of adopting plug in hybrid electric vehicles (PHEV) on emission and gas tax revenue in the state. The American Association of State Highway and Transportation Officials' Census Transportation Planning Products 5 year data (2006-2010) were used to establish the number of commutes to and from each municipality in New Jersey. As the census data contains the duration, but not the length of commutes, the distances for each commute were obtained using Google Distance Matrix API. The data were then manipulated and organized such that a distribution of commute distances by county to county is available for all combination of origin and destination counties in New Jersey. Compiling the trips on a county level is the appropriate level of detail for the long term goal of this project.

The form of the data will be simple enough to easily visualize and manipulate, yet contain enough information to allow predictions of effects that have reasonable fidelity to be developed. Preliminary investigation of the data indicates differences in commuter trends within New Jersey, based on the county of origin of commutes. This observation suggesting that it will be important to account for regional differences in commuting behavior within a state when studying the effect of PHEV adoption, and that some counties might be better suited for efforts to encourage PHEV than others.

Econometric Testing of Male and Female Seasonality Patterns in the Citi Bike Program

Author(s): Shenuque Tissera and Jennifer Freund

CUNY Macaulay Honors College at the College of Staten Island

Citi Bike is the largest bike share system in the United States, outperforming other programs such as Boston's Hubway and Washington's Capital bikeshare programs. To fully explore the value of this transportation method and to develop better operational practices, we argue that a full understanding of the seasonality pattern of use and other patterns of variation is necessary. In our preliminary analysis, it is clear that bike share users vary considerably and there is not just one type of rider.

In particular, the program is spatially arranged in only certain parts of New York City, and in fact only two of the five boroughs have access to bike share. Because of this arrangement of stations, the users of bikeshare are interesting to study from a transportation perspective. Their patterns of use may be affected by the arrangement of the programs bike docks, weather events and holidays. This study will focus on exploring the various differences between the seasonality patterns of male and female riders.

Large scale data (over 7 million trip records) will be analyzed using econometric techniques and then mapped using Geographic Information Systems.

The authors look to uncover and document the fundamental differences in bike share use between male and female riders. A more profound understanding of user behavior has the potential to improve systems operations and also help plan for future system expansion.

Lane Closure Analysis Using Data Warehouse: OLAP

Author(s): Patricio Vicuna, Ph.D. Candidate CCNY-CUNY

Singh, Brijesh Kumar, New Jersey Institute of Technology (NJIT), Newark, NJ

Kyriacos C. Mouskos, Ph.D., CCNY-CUNY

Steven I. Jy. Chien, Ph.D., NJIT

Under the project "NJDOT research: Feasibility of lane closures using probe data" a large data set was gathered from New Jersey DOT in an XML format. One of the objectives of the project is to create a datawarehouse (DW) that could then be used to develop a lane closure model to predict the corresponding traffic flow characteristics. This DW is then used to reports with multidimensional structures MDX for data analysis. The data were provided in an XML file format (Inrix data of speed with timestamp) for the years 2012 and 2013. In addition, corresponding incident related data were gathered from the OpenReach platform developed by TRANSCOM for roadway facilities in the State of New Jersey. The first task is to create a procedure to migrate the XML file to Microsoft Sqlserver, the second task is how to create an OLAP Database, that will include a fact table and a dimensional table. Another task is to create the dimensions (e.g. year, month, day, hour, minute, mile post, facility) and measures (e.g. speed, average speed, standard deviation of the speed) relevant to the development of the LC model for NJDOT. The union of the measures and dimensions are called "cube - online analytical processing" or an OLAP cube. We will present some of the functional analysis of the LC cube related to the development of the LC project, including the related computational performance.

A Transit Signal Priority Simulation Model Using Bus Health Data

Author(s): Shu-Yuan Wu and Theodore Brown

Department of Computer Science

Graduate Center, City University of New York

Transit Signal Priority (TSP) is regarded as one of the efficient ways to improve public transit travel time delay and enhance operation, which involves the coordination among transit vehicle detection systems, TSP request servers, traffic control systems, and communication systems. Traffic simulations are usually conducted before deploying a new TSP system in the field to evaluate the impact of the deployment. To make the simulation as accurate as possible, transit vehicle field data, such as travel time, dwell time, and bus delay at intersections caused by red signals is gathered to estimate the potential improvement a new TSP system can provide. This study, a collaboration between New York City Transit (the operator), the New York City Department of Transportation (the street authority) and the City University of New York, analyzes bus health data (instead of AVL or APC data) collected from the fleet of 43 M15 Select Bus Service buses to inform and enhance the TSP project design on the Lower Manhattan portion of the route. Additionally, we have a simulation model based on bus health data. The study provides a comprehensive analysis at the stop and intersection levels, which provides transit agencies and traffic engineers a different potential for an improved TSP system design. The agent-based TSP simulation model using data extracted from bus health data as input, which is specifically designed for TSP systems being deployed in highly traffic congested area. We consider two types of autonomous and intelligent agents: transit buses and traffic signals. In contrast to existed agent-based traffic modeling and simulation, our bus agents do not require much intelligence for decision making but traffic signals play more sophisticated roles.

Severe Weather Performance Monitoring

Author(s): Stanley E. Young, P.E. Ph.D. (Primary Author), Reuben M. Juster, EIT (Secondary Author)

University of Maryland College Park, Center for Advanced Transportation Technology

Measuring the performance of departments' of transportation (DOT) response to convective, tropical, or winter weather is difficult. Although agency can track sandbags, tons of salt or hour of plow activity, actually measuring the effectiveness of obtaining clear pavement has been primarily subjective. Several recent research studies has shown the utility of broad based probe data to assess both the onset and recovery from the impact to traffic due to severe weather on either a corridor or in a region. This presentation reviews these efforts and proposed a generic method for assessing winter road clearance performance using broad based probe data that can be adapted for use in any state or region.

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