

RESEARCH NEWS
Spring 2015

UNIVERSITY TRANSPORTATION RESEARCH CENTER

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REGION 2

USDOT OST-R'S ASSISTANT SECRETARY, GREGORY D. WINFREE VISITS UTRC

May 15, 2015 at UTRC, The City College of New York



A Group Photo with the visiting USDOT OST-R's Officials at the University Transportation Research Center on May 15, 2015

On May 15, 2015, the University Transportation Research Center hosted the Assistant Secretary for Research and Technology, Mr. Gregory D. Winfree. The Office of the Assistant Secretary for Research and Technology (OST-R) coordinates the U.S. Department of Transportation's (USDOT) research programs and is charged with advancing the deployment of cross-cutting technologies to improve our Nation's transportation system. Mr. Winfree was accompanied by Ms. Denise Dunn and Ms. Amy Stearns, both are grant managers at the University Transportation Centers (UTC) Program Office at OST-R. The meeting was held at the City College of New York and was attended by representatives from both NY and NJ Division offices of the Federal Highway Administration (FHWA), the Region 2 Administrator of the Federal Transit Administration (FTA), UTRC's agency partners and members the consortium.

Mr. Winfree was greeted on campus by Dean Gilda Barabino of the Grove School of Engineering and by the Chair of the Civil Engineering Department, Dr. Julio Davalos, Dr. John Falcochio, UTRC chairman, Dr. Robert Paaswell, UTRC Director Emeritus, and Dr. Camille Kamga, UTRC Director.

As host of the visit, Dr. Camille Kamga chaired a meeting in which representatives of UTRC's partner agencies, consortium members, and UTRC staff, interacted with USDOT, shared and discussed their research and education programs. Recognizing OST-R as the home of the ITS-JPO, discussion topics focused mainly on the opportunities and challenges caused by the technology innovations on transportation mobility. UTRC members shared many innovative solutions and research projects conducted under the UTRC banner.

INVESTING IN AN ACCESSIBLE NEW YORK A CONFERENCE ON PUBLIC TRANSPORTATION AND NEW YORK'S FUTURE

May 8, 2015 at New York Institute of Technology

UTRC, in collaboration with Regional Plan Association, organized a conference on “Investing in an accessible New York: A Conference on Public Transportation and New York’s Future” that was held on May 8th, 2015 at the New York Institute of Technology. The event, convened by the nation’s transportation leaders, aimed to discuss how New York City’s transit network has shaped the city we know today and the role that transit investments will play in New York’s future. For the conference proceeding (Photos & Videos), please visit: <http://utrc2.org/events/NYC-Transportation-Investment>



Beverly Scott, CEO, Beverly Scott Associates, LLC



Robert D. Yaro, President Emeritus, Regional Plan Association



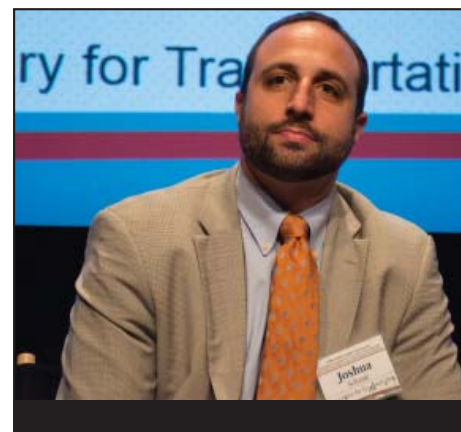
Robert E. Paaswell, Director Emeritus, UTRC



Emil Frankel, Assistant Secretary for Transportation Policy, USDOT 2002-2005, Senior Fellow of Eno



Mortimer Downery, Chair, Washington Metropolitan Transit Authority



Joshua Schank, President & CEO, Eno Center for Transportation



Jonathan Peters, Professor, College of Staten Island, CUNY



David King, Assistant Professor, Columbia University



Peter Derrick, Senior Fellow, NYU Rudin Center for Transportation Management and Policy

UTRC Newly Awarded Projects

UTRC has funded the following projects in response to its 2015 Research for Proposal. The projects fall into the following research categories:

- Faculty Initiated
- Emerging Investigators
- Education and Technology Transfer
- Research Cluster Team

Faculty Initiated Projects

The primary purpose of this program is to fund novel and exciting ideas from faculty in the area of transportation. The projects funded should seek to promote excellent and innovative research on transportation problems relevant to U.S. DOT's Region 2.

Principal Investigator (s)	Institution	Research Topic
Joseph Berechman	City College of New York/CUNY	Transportation Infrastructure Robustness: Analysis and Measurement
Jamie Kang	SUNY Buffalo	Market Potential for Battery Electric Vehicles based on Multi-Day Activity-Travel Patterns
Rae Zimmerman	New York University	Public Transit and Mandatory Evacuations Prior to Extreme Weather Events in New York City
Jeff Ban	Rensselaer Polytechnic Institute	Developing a Macroscopic Decision Making Tool for Emergency Evacuation Planning
Baris Salman	Syracuse University	Innovative Techniques for Maintenance, Repair, and Reconstruction (MRR) of Asphalt Roadways
Krik Barrett	Manhattan College	Development of a New, Effective and Low-cost Media for Sustainable Management of Polluted Road Stormwater in Highly Urbanized Areas
Joyoung Lee	New Jersey Institute of Technology	Smart Bus System under Connected Vehicles Environment
Sherif Lotfy Abdelaziz	SUNY Stonybrook	Self-Heated Pavements
Roger Chen	Rochester Institute of Technology	Building a Sense of Place in an Information Era: Accessibility, Connectivity and Travel
Parth Bhavsar	Rowan University	Risk analysis of autonomous vehicles in mixed traffic streams
Michael Manville	Cornell University	Do Consumer Expenditures Affect the Demand for Driving?
Jonathan Voris	New York Institute of Technology	Secure and Private Sensing for Driver Authentication and Transportation Safety
Roger Anderson	Columbia University	Intelligent Wireless Charging for Electric Buses in a Smart City
Didier Valdes	UPR Mayaguez	Using Mobile Computers to Automate the Change Order Decision Making Process and Improve Total Time and Cost Predictions on Highway Construction Projects
Alison Conway	CCNY	An Examination of Commercial Vehicle Access to Residential Buildings in New York City
Naresh Devineni	CCNY	An Agent-Based Disaster Response Inference Model for Assessment of Transportation Risk under Extreme Events.
Sulapha Peethamparan	Clarkson	ALKALI SILICA REACTION (ASR) in CEMENT FREE ALKALI ACTIVATED SUSTAINABLE CONCRETE

Emerging Investigators

This program is to assist faculty (especially junior faculty) at UTRC member institutions to learn to write competitive research proposals and to develop relationships with funding agencies.

Principal Investigator (s)	Institution	Research Topic
Joseph Bechtel	The College of NJ	Improving Cross-Frame Design to Reduce the Effects of Skew in Steel I-Girder Bridges
Qian Wang	Manhattan College	A Probability-Based Approach for Assessment of Roadway Safety Hardware
Shikui Chen	SUNY Stonybrook	Computational Synthesis of High-Performance Non-Pneumatic Tires
Candace Brakewood	CCNY	Evaluating the Impacts of Real-Time Information on Subway Ridership in New York City
Juhyuk Moon	SUNY Stonybrook	Nano-modified geopolymers for concrete infrastructure rehabilitation
Neveen Shlayan	SUNY Maritime	Spectral Based Controllability-preserving Pedestrian Evacuation Network-Synthesis Using Multilayered Estimation Models in Real-time
Sung Hoon Chung	SUNY Binghamton	Emerging Investigators: Disaster Relief Vehicle Routing Under Uncertainty
Qing He	SUNY Buffalo	Heterogeneous Regional Signal Control

Education and Technology Transfer

Projects under this category include outreach activities to advance the awareness of the general public, policy makers and transportation organizations on the issues, consequences, objectives and resources, associated with the USDOT strategic goals.

Principal Investigator (s)	Institution	Research Topic
Nada Assaf-Anid	NYIT	UTRC Education and Technology Transfer: NYIT proposal for a Transportation Innovation Series
Mitchell Moss	NYU	Emerging Leaders in Transportation
Hongmian Gong	CUNY	Developing GIS-T in the Geography Curriculum at Hunter College

Research Cluster Team

The Center will support collaborative Research Focus Teams consisting of faculty, students, and transportation professionals, drawn from throughout the UTRC consortium and organized around a specific transportation issue.

Principal Investigator (s)	Institution	Research Topic
Changxu Wu	SUNY Buffalo	Drinking and Driving Interruption and Prevention Research Cluster Team: A Multidisciplinary Research to Solve a Critical Transportation Safety Problem

Education

UTRC's two popular scholarship programs started receiving applications for the year 2015;

- NYMTC/UTRC September 11th Memorial Program
- Advanced Institute for Transportation Education (AITE)

- **2015 NYMTC/UTRC September 11th Memorial Scholarship (OPEN)**

The New York Metropolitan Transportation Council/University Transportation Research Center September 11th Memorial Program Academic Initiative will continue during the 2015-16 academic year. We are very proud to be entering the tenth year of this important educational endeavor. Two on-site internship positions will be available at NYMTC member agencies in the New York City region or at NYMTC's office in Manhattan.

Applicants will have the opportunity to indicate their preferred internship topic, but final placements for the two awardees will be made by the NYMTC September 11th Selection Subcommittee.

For more information about the 9/11 Scholarship program, please visit:

<http://www.utrc2.org/education/september-11th-memorial-program>

The submission deadline is May 26, 2015.

- **2015 AITE Scholarship Applications (CLOSED)**

The purpose of UTRC's Advanced Institute for Transportation Education (AITE) scholarship program is to increase the knowledge and capabilities of transportation professionals by supporting the pursuit of master's degrees in transportation-related fields. The program supports both full-time master's students and professionals working at participating agencies who are looking to increase their expertise through pursuit of a master's degree. All Universities that are members of the UTRC Consortium are eligible to participate in the AITE Scholarship Program.

The details of the full AITE program is available at:

<http://utrc2.org/education/aite-scholarships>.

The received applications are under review process and the awards announcement will be made by June 1st 2015.

NEW STAFF AT UTRC



Dr. Wei Hao Research Fellow

UTRC welcomes Dr. Wei Hao as the new Research Fellow.

Dr. Hao research interests are in the areas of Traffic Operations and Control, Transportation Safety, Transportation Planning and ITS. He specializes in traffic operational analysis, with extensive knowledge in simulation modeling and travel demand modeling. Dr. Hao is a key engineer of several major transportation system projects for NYDOT, NJDOT and NJ transit. He is also a member of Institute of Transportation Engineers (ITE) and the Transportation Research Board (TRB) Committee on Railroad Operational Safety.

UTRC Faculty Profile

Riyad S. Aboutaha

PhD, F-ACI

Associate Professor

Syracuse University

Syracuse, NY, U.S.A.

E-mail: rsabouta@syr.edu



Dr. Riyad Aboutaha, is an associate professor of structural engineering at Syracuse University. He is a Fellow of the American Concrete Institute (ACI).

Dr. Aboutaha has over 34 years of construction and research experience. In the last 25 years, he has been researching the use of new materials for renewal of civil infrastructure. Dr. Aboutaha has offered numerous seminars and workshops on evaluation and rehabilitation of concrete bridges with CFRP composites, including several for the U.S.A. Federal Highway Administration (FHWA), and the New York State Department of Transportation (NYSDOT).

He published the first guide on assessment, evaluation, and rehabilitation of concrete bridges with CFRP composites. In addition, he completed major research projects on the GFRP bar ComBAR for Schöck Bauteile GmbH of Baden-Baden, Germany, and other on the durability of wearing surfaces for FRP bridge decks, for NYSDOT. Prof. Aboutaha's current research interest is in the area of the economy of preventive maintenance of concrete bridges. In addition, he has published numerous papers on strength evaluation of corroded reinforced concrete members, including beams, columns, and highway girders.

News from the UTRC Consortium Faculty

Dr. Candace Brakewood, an Assistant Professor at the Department of Civil Engineering, CCNY Research publication on Real-Time Arrival Information Increases Transit Ridership

A new study published in Transportation Research Part C: Emerging Technologies provides evidence that real-time information can increase public transit ridership. The research team — comprising Candace Brakewood (City College of New York), Gregory S. Macfarlane (Parsons Brinckerhoff), and Kari Watkins (Georgia Tech) looked at New York City Transit (NYCT) bus ridership before and after the Bus Time real-time information system was introduced. Brakewood and her team measured ridership from January 2011 through December 2013, when Bus Time was introduced in Staten Island, the Bronx, and Manhattan (the MTA completed the citywide deployment in 2014). After comparing before and after ridership and controlling for everything from the Citi Bike launch to Hurricane Sandy, the researchers concluded that real-time information contributed to an average increase of about 118 new weekday trips per route — or a 1.7% increase. The impacts were more noticeable on the more popular routes, where the researchers attributed a 2.3% increase in daily route-level ridership to Bus Time. Brakewood's findings are consistent with earlier research that found an increase of approximately 2% in Chicago Transit Authority (CTA) ridership after the CTA Bus Tracker system was introduced. The New York City study results, concurrent with the previous findings in Chicago, suggest that investments in bus customer information systems have had a significant positive impact on bus ridership levels and are an important improvement in local bus service. The full journal article can be accessed at: <http://www.sciencedirect.com/science/article/pii/S0968090X15000297>. A link to the MTA's Bus Time website: <http://bustime.mta.info/>

Stevens Professor Provides Subject Matter Expertise in a Newly Released Report Entitled: Innovative Technologies for a Resilient Marine Transportation System

Dr. Thomas Wakeman, co-Director Stevens Maritime Systems graduate program, provided guidance and subject matter expertise in the preparation of a newly released report entitled Innovative Technologies for a Resilient Marine Transportation System. Sponsored by the Transportation Research Board (TRB) and the U.S. Committee on the Marine Transportation System (CMTS), the report is a research and development call to action based ideas and outcomes from the TRB's 2014 biennial Marine Transportation System (MTS) research and development conference.

The conference included thought leaders from academia, industry, and Federal and State government agencies, to discuss current and emerging issues in the following areas: Future of Navigation, MTS Resilience, Engineering with Nature, Innovative Technology, Security, Data Management and Sharing, Asset and Maintenance Management, and System Performance.

The call to action report highlights key outcomes from the biennial conference and offers suggestions for future work within MTS research and development.

To review the report and the call to action items, please visit the CMTS webpage at: <http://www.cmts.gov/Bulletin.aspx?id=91>

Dr. Scott Le Vine of SUNY New Paltz was Appointed as a Visiting Professor at Southwest Jiaotong University in Chengdu (China)

Dr. Scott Le Vine, an Assistant Professor of Urban Planning at SUNY New Paltz was appointed in March 2015 as a Visiting Professor at Southwest Jiaotong University in Chengdu (China), term 2015-2018.

Le Vine's first visit to SWJTU took place March 11th through 22nd. He delivered two seminars to graduate students and faculty: one covering his research on 'Peak Car' and 'Shared Mobility' (<http://ctt.swjtu.edu.cn/news/shownews.asp?id=10807>) and one covering general skills for scientific writing aimed at Western audiences (<http://ctt.swjtu.edu.cn/news/shownews.asp?id=10786>).

Le Vine's work with SWJTU colleagues involves collaboration on Autonomous Vehicles research; the research team anticipates having findings to disseminate later in 2015.

News from the Lighting Research Center/RPI

Dr. John Bullough from Lighting Research Center Received the Best Lecture Award

Senior Research Scientist John Bullough from the Lighting Research Center at Rensselaer Polytechnic Institute received the Best Lecture award for his presentation entitled "Vehicle forward lighting: A new look at intelligent adaptive headlamps, safety and performance," given at the Vehicle and Infrastructure Safety Improvement in Adverse Conditions and Night Driving (VISION) Congress. The VISION Congress is organized by the French Societe des Ingenieurs de l'Automobile, and was held in Versailles in October, 2014.

Rae Zimmerman was Appointed to the Committee on Pathways to Urban Sustainability

Dr. Rae Zimmerman, a Professor of Planning and Public Administration at the New York University was appointed to the committee on Pathways to Urban Sustainability: Challenges and Opportunities of the National Research Council, National Academies. We wish her the best on her appointment.

Lighting Research Center at the Transportation Research Board 2015 Annual Meeting

Researchers from the Lighting Research Center at Rensselaer Polytechnic Institute made several presentations at the latest Transportation Research Board (TRB) Annual Meeting, held in Washington in January 2015. Senior Research Scientist John Bullough presented “*Luminous intensity requirements for service vehicle warning beacons*” and “*Research findings on economic and life-cycle impacts of adoption of LED lighting at airports*,” while Lead Research Specialist Nicholas Skinner presented “*A Ponzo scheme for roadway safety: Modifying chevron size and position to reduce driver speeds on curves*.”

Lighting Research Center Completes Research Studies for NYSDOT

Two research studies were recently completed for the New York State Department of Transportation (NYSDOT) by the Lighting Research Center at Rensselaer Polytechnic Institute. In one, entitled “*Nighttime Highway Construction Illumination*,” the project team conducted demonstrations of work zone lighting, sign and marking materials, and flashing warning lights, and developed a checklist for the planning of work zone lighting and traffic control. In the other project, entitled “*High Visibility Reflective Sign Sheeting Evaluation*,” the project team conducted field measurements of highway sign luminance in New York City and developed a calculation tool for identifying visually effective sign sheeting materials for highway signs.

Dr. Karl Korfmacher, an Associate Professor at the Rochester Institute of Technology publishes a paper on UTRC funded research; Analysis of Environmental and Infrastructure Impacts of Transportation Activities Associated with High-Volume Hydraulic Fracturing Operations in Marcellus Shale Formation in Transportation Research Records (TRR)

Dr. Korfmacher’s TRB paper, *Analysis of Environmental and Infrastructure Impacts of Transportation Activities Associated with High-Volume Hydraulic Fracturing Operations in Marcellus Shale Formation (15-3146)* was accepted for publication in TRR. This was based on the results from UTRC grant. Drs. James Winebrake and J. Scott Hawker are co-authors.

UTRC Faculty; Dr. Joseph Berechman and Patrizia Nobbe’s publications resulted from the UTRC Funded research on Transportation Mega Project-Decision Making

- **Article submitted for publication:**

[Coalition Formation in Transport Megaproject Decision-Making: Evidence from Two U.S. Case Studies](#)

Patrizia Nobbe, European Union Studies Center, The Graduate Center,
The City University of New York, 365 Fifth Avenue, Suite 5.208, New York, NY 10016, pnobbe@gc.cuny.edu.

Joseph Berechman, Marvin Kristein Professor of Economics, The City College,
The City University of New York, 160 Convent Avenue, New York, NY 10031, jberechman@ccny.cuny.edu, 212-650-6214.

The dwindling of federal funding and the devolution of infrastructure investment decisions to regional and local levels have politicized the prioritization and selection of transportation projects, in particular, the multi-billion dollar mega-projects. Local politics and conditions make the successful implementation of mega-projects conditioned on support coalitions for agenda setting and, increasingly, also for funding. To examine the scope and weight of this argument we investigated two multi-billion dollar investment projects in different metropolitan areas: Alameda Corridor, a freight rail project in Southern California, and the Second Avenue Subway, a transit investment project currently under construction in New York. The analysis demonstrates that the presence of strong support coalitions has been prerequisite for the successful choice and construction of these projects. A measure of a successful coalition is then, how powerful, and persevere, the coalition partners are to find necessary funds and get the project going.

- **Article in progress:**

[Comparative Infrastructure Investment Funding: Transportation Megaproject Funding Models and Decision Structures](#)

Patrizia Nobbe, European Union Studies Center, The Graduate Center,
The City University of New York, 365 Fifth Avenue, Suite 5.208, New York, NY 10016, pnobbe@gc.cuny.edu.

Joseph Berechman, Marvin Kristein Professor of Economics, The City College,
The City University of New York, 160 Convent Avenue, New York, NY 10031, jberechman@ccny.cuny.edu, 212-650-6214.

Much of the successful implementation of multi-billion dollar projects hinges on funding. Based on a database of 60 international transportation megaprojects, the paper provides comparative data about the funding realities of different types of investments, such as highways, subways or rail projects. The objectives of the paper are threefold. We first compare funding models for investment projects by examining their respective proportionate shares of funding sources and funding types. Second, we analyze whether different funding models impact project performance, such as cost overrun. Finally we aim to evaluate the impact of funding models on the project decision-making process. Although tentative in nature, this will provide researchers and investment decision-makers with data on funding patterns and with insights into the relationship between funding models and other project criteria.

- **Book forthcoming:**

[Years of Hope, Decades of Frustration: The History and Politics of the Second Avenue Subway](#)

Peter Derrick, Senior Fellow at the Rudin Center for Transportation Policy and Management, New York University. Transit Historian

Patrizia Nobbe, European Union Studies Center, The Graduate Center,
The City University of New York, 365 Fifth Avenue, Suite 5.208, New York, NY 10016, pnobbe@gc.cuny.edu.

The Second Avenue Subway is a fascinating case study in transportation investment decisions, politics, financing, and perseverance. The book explains why it has taken so long to construct the subway. Many New Yorkers refer to the project as “the subway that was never built,” with a tone that implies incompetence or malfeasance on the part of transit officials or politicians. In fact, the story is more complex and two main themes emerge repeatedly: changing regional transportation politics over the decades, and the efforts to direct funding towards the project — the latter strongly influenced by the competition between highways and transit. First proposed in 1920, construction of the first phase of the Second Avenue Subway finally began in 2007, and is expected to open in Dec. 2016. (Contract with Cornell University Press)

- **Article submitted for publication:**

[Can Megaprojects Be On Time and On Budget? Lessons from Three U.S. Case Studies](#)

Charles Brecher, Professor Emeritus of Public and Health Administration, Robert F. Wagner Graduate School of Public Service

Charles Brecher, Consulting Co-Director of Research

Patrizia Nobbe, European Union Studies Center, The Graduate Center,
The City University of New York, 365 Fifth Avenue, Suite 5.208, New York, NY 10016, pnobbe@gc.cuny.edu.

The implementation of large infrastructure investments, so-called “megaprojects,” is typically characterized by delays and cost overruns; adverse environmental impacts sometimes are not sufficiently anticipated. Case studies of three U.S. megaprojects were undertaken to extract lessons that address these challenges. Two projects (the JFK airport AirTrain in New York and the Alameda Corridor freight rail project in Los Angeles) were relatively successful in terms of timing, budget and environmental assessment; the “Big Dig” highway project in Boston proved far more costly and took far longer than initially anticipated.

The varying experiences suggest lessons relating to four features of the projects:

- 1 Mechanisms for addressing organizational and political complexity. High-level project champions, notably a state governor, may successfully promote projects, but election cycles interfere. New special purpose agencies may help avoid this problem.
- 2 Financing arrangements. Pressure to keep project costs within budget increases when projects rely on user fees and integrate users as stakeholders, and decreases when they rely on external funding.
- 3 Project management techniques. Risk allocation mechanism such as design-build contracts can reduce cost over-runs and reliance on revenue bond financing promotes more reliable revenue estimates; in contrast, cost-plus contracts for management create risks of weak cost controls.
- 4 Environmental review procedures. In the U.S., required pre-project reviews identify and address concerns relating to conventionally defined environmental harm, but mitigation commitments need to be more effectively monitored after construction and issues related to global warming are not included in the required reviews.

Upcoming Events

UTRC Faculty Presentations at NJDOT

UTRC, in collaboration with NJDOT, has planned three presentations at NJDOT Headquarters:

- June 22, 2015: Integration of Bus Stop Count Data with Census Data for Improving Bus Services and Efficiency
Speaker: Catherine Lawson, University at Albany, SUNY
- July 14, 2015: Smartphone-Based Teen Driver Support System: Results from a 300 teen driver field operational test
Speaker: Max Donath, Roadway Safety Institute, University of Minnesota
- July 23, 2015: Workzone Operations, Planning and Safety: The road from research to implementation
Speaker: Kaan Ozbay, New York University

THE FUTURE OF THE TAXI MEDALLION SYSTEM & FOR-HIRE SERVICES IN A DISRUPTIVE TECHNOLOGY WORLD

June 30, 2015, NYIT Auditorium on Broadway
8: 00 am – 2:00 pm

Join UTRC for a summit that will discuss facts and opinions from a wide variety of stakeholders, policy-makers, and academics on the current state of the NYC taxicab medallion industry, including the valuation of medallions in NYC and beyond. Also, the manner by which the for-hire vehicle industry (liveries, black cars and limousines) are coping with smartphone technology disruption will be discussed. Finally, a primer or review of how NYC's handling of smartphone app regulation fares against the rest of the country will be discussed, including the release of a seminal report on criminal background check best practices conducted by professors at the UTRC and John Jay College of Criminal Justice.

RSVP at: <http://www.utrc2.org/events/taxi-medallion-system-and-for-hire-services>



Innovation and Disruption in Urban Mobility

October 9, 2015 at the SUNY Global Center
10:00 am – 12:00 pm

UTRC will host a visiting scholar seminar featuring Dr. Susan Shaheen from the University of California, Berkeley. This event will explore innovation and disruption in urban mobility. There have been many new forms of mobility emerging in the urban transportation environment. This has led to increased traveler choice and controversy among the new entrants and existing service providers. Professor Shaheen will examine trends, recent developments, and the impacts of these services. She has studied the social and environmental impacts of carsharing, bikesharing, ridesharing, and ridesourcing (e.g., UberX, Lyft, and Sidecar) in her research on shared mobility for over 15 years. She will also discuss the current policy framework and how it is evolving to address these services.

For more information, please visit the UTRC's website: <http://www.utrc2.org/events/taxi-medallion-system-and-for-hire-services>

Past Events

UTRC Director, Dr. Camille Kamga Presented at the RoboUniverse Conference on “Connected Vehicles to Autonomous Vehicles: Challenges and Opportunities to Improve Mobility and Safety”

May 11-13, 2015 at the Javits Center, NYC

Dr. Camille Kamga, UTRC Director and Assistant Professor at the City College of New York was invited to present at the RoboUniverse Conference that was held from May 11-13, 2015 at the Javits Center, NYC. Dr. Kamga presented on Tuesday, May 12, 2015; the 2nd day of the conference on the Driverless Cars Conference Workshop. In his presentation, he mentioned that for the past decade, innovation within the automotive sector has brought major technological advances, leading to safer, cleaner, and more affordable vehicles. While the dream of an automated vehicle-highway system has been around for some time, we are finally witnessing a convergence of technologies that promise to make that dream a reality. These technologies include dramatic advances in wireless communications, sensing, control, computing and automation, which are promising to transform transportation as we currently view it. Connected and autonomous cars will transform our lives, influencing everything from the routes we take to work to how we find the closest parking spot. What are the challenges and opportunities that these technologies will bring on our transportation system?

For more information, please visit: <http://www.robouniverse.com/new-york/2015/>

Dr. Camille Kamga also presented at the ARGION’s Event on “Accelerating the Transportation Infrastructure: The Future of Autonomous Vehicles”

April 30, 2015, New York City

Dr. Kamga participated and presented in a panel discussion by an event organized by ARGION on the Future of Autonomous Vehicles. The event took place on Thursday, April 30, 2015. The panel was moderated by Daniel Spitzer from Hodgson Russ LLP and speakers included; Sudharson Sundararajan, Associate at the Booz Allen Hamilton; Keith Kerman, Chief Fleet Management Officer at DCAS/ NYC Fleet; and Dr. Camille Kamga, Director at the University Transportation Research Center.

The panel discussed and addressed the following questions:

- How will the roadways be altered to accommodate autonomous vehicles?
- What safety regulations will be imposed?
- How will autonomous vehicles fit into the smart city paradigm?
- How will car ownership change?
- What will be the market adoption milestones of these vehicles?
- What are the implications for data sharing?

Please follow the link to the even’t video:

<https://www.youtube.com/watch?v=FuxWJwlzOWI>

2015 AASHTO Subcommittee on Bridges & Tunnels Annual Meeting

April 19-24, 2015 at the Saratoga Hilton, New York



UTRC, in collaboration with New York State Department of Transportation organized the 2015 AASHTO Subcommittee on Bridges & Structures Annual meeting that was held from April 19-24 at the Saratoga Hilton, NY. The conference was well attended by 500 people across the nation including state DOT employees and consultants. The Annual AASHTO Subcommittee on Bridges and Structures (SCOBS) working meeting is a 4 day event comprised of two days of technical committee meetings and two days of general session. The 2016 SCOBS annual meeting will be held in June 2016 at Minnesota.

NYU Hosted an Event on: TAXI SHIFT-CHANGE HACKATHON: EVENT RECAP

April 22, 2015 at the Rudin Center



The NYU Rudin Center joined forces with NYC's Taxi and Limousine Commission to help resolve the taxi shift-change issue- when taxis are unavailable between 4 and 6 p.m. due to driver handoffs of vehicles. The hackathon took place on April 11 at the Rudin Center, under the sponsorship and technical guidance of Google.

Data scientists, civic hackers, graphic designers, analysts, government policymakers, and statistics hobbyists gathered to discover solutions to the taxi gap, which is estimated to miss out on about 11,000 rides daily.

For more information, please visit:

<https://wagner.nyu.edu/rudincenter/2015/04/taxi-shift-change-hackathon-event-recap/>

Meera Joshi, NYC TLC Commissioner, kicks off the shift-change hackathon on April 11, 2015.

UTRC at the University of Puerto Rico's 2015 Transportation Week

March 17-19, 2015 at the University of Puerto Rico-Mayagüez Campus



Dr. Camille Kamga and Dr. Robert Paaswell represented UTRC at the Student Chapter of the Institute of Transportation Engineers at the University of Puerto Rico-Mayagüez Campus celebrated the Annual Transportation Week on March 17-19, 2015

The Student Chapter of the Institute of Transportation Engineers at the University of Puerto Rico-Mayagüez Campus celebrated the Annual Transportation Week on March 17-19, 2015. Transportation Week provided an opportunity for the students, faculty, and transportation professionals to join together for greater awareness and appreciation of the transportation sector. The ITE Student Chapter organized various events to celebrate the UPR-Mayaguez transportation program. Dr. Camille Kamga and Dr. Robert Paaswell represented UTRC at the ceremonies. They met with students, shared their experience as transportation professionals and gave lecture at a full-occupied auditorium. Dr. Didier Valdes and Dr. Benjamin Colucci organized meetings and visits with Puerto Rico's transportation Agencies at San Juan. Meetings were held with the Secretary of the Department of Transportation and Public Works of Puerto Rico and executives from the Highway and Transportation Authority (ACT) and the Metropolitan Bus Authority (AMA). During these meetings, UTRC and the representative of the transportation agencies discussed ways to work together on critical transportation problems and to provide opportunities to students to get involved on projects performed by the Department of Transportation and Public Works of Puerto Rico.

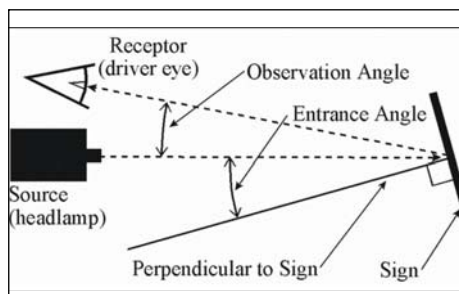
UTRC Sponsored Research

COMPLETED PROJECTS

HIGH VISIBILITY REFLECTIVE SIGN SHEETING EVALUATION

PI: Mark S. Rea, Dr. John D. Bullough
Institution: Rensselaer Polytechnic Institute Lighting Research Center
Sponsor: NYSDOT & UTRC

Highway signs are a critical part of the roadway infrastructure, providing important information to drivers to assist in navigation, identify potentially hazardous roadway locations, and to remind drivers of safe operating practices. Ensuring that signs have sufficient visibility to the driving public is a key undertaking by transportation agencies such as NYSDOT. In order to assist NYSDOT in evaluating and comparing different materials for photometric and visual performance, the present project was conducted to select and validate a visibility model for use as a basis for performance specifications, to develop a practical methodology for conducting field measurements of sign performance along roadways, and to develop practical tools to assist highway engineers in making informed quantitative decisions about the levels of performance provided by different materials.



Simplified diagram of the entrance and observation angles describing retroreflectivity performance (from <http://safety.fhwa.dot.gov>).

ON THE WEB

The full report is available for a free download at the UTRC website:
<http://www.utrc2.org/sites/default/files/pubs/Final-High-Visibility-Signs.pdf>

ROBOTIC INSPECTION OF BRIDGES USING IMPACT-ECHO TECHNOLOGY

PIs: Dr. John Xiao, Dr. Anil Agrawal
Institution: The City College of New York, CUNY
Sponsor(s): UTRC

During the first year of the project, we integrate an impact-echo device with a mobile robot for automatic NDT inspection of bridge decks to generate a 2D/3D map showing flaws. We found from field test that most of the bridge decks have groove surfaces to enhance the friction of the vehicles on the bridge. The current Impactecho device we used doesn't work well in groove surfaces even if it is used in manual operation. After consulting with world renowned scientists and NDT firms, we got to know that the ultrasonic flaw detector with spring loaded sensor may provide a solution to this challenge.



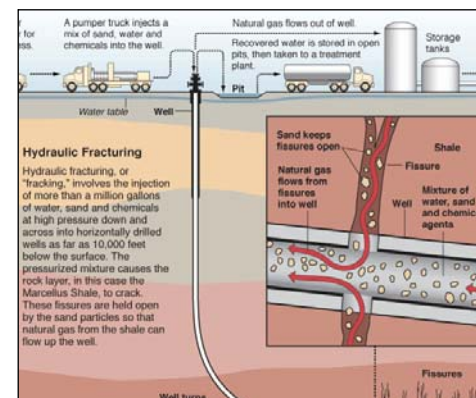
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<http://www.utrc2.org/sites/default/files/pubs/Final-Robotic-Inspection-Bridges.pdf>

ANALYSIS OF ENVIRONMENTAL AND INFRASTRUCTURE IMPACTS OF TRANSPORTATION ACTIVITIES ASSOCIATED WITH HIGH VOLUME HORIZONTAL HYDRAULIC FRACTURING OPERATIONS

PI: Karl Korfmacher, Ph.D, Scott Hawker, Ph.D, James Winebrake, Ph.D.
Institution: RIT (Rochester Institute of Technology)
Sponsor: UTRC

The natural gas extraction method, High-Volume Horizontal Hydraulic Fracturing (HVHF), has a significant transportation component that impacts transport infrastructure and rural communities in both positive and negative ways. Estimates provided by the US Energy Information Administration put natural gas reserves of the entire Marcellus Shale formation, our area of interest, at 410.3 trillion cubic feet. The New York State Department of Environmental Conservation estimates each Marcellus Shale well will require 625-1148 one-way truck trips for equipment, materials, and waste movement. There are currently upwards of 20,000 wells or approved permits in the study area. While economically benefiting rural areas, where the majority of the wells would be located, there are environmental and social tradeoffs to developing these resources, many of which are associated with transportation activities.



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<http://www.utrc2.org/sites/default/files/pubs/Analysis-of-Environmental-and-Infrastructure-Impacts.pdf>

COMPLETED PROJECTS

SUBSURFACE IMAGING OF CORROSION IN PAINTED STEEL BRIDGES

PI: Dr. Alexey Sidelev
Institution: New York University
Sponsor: UTRC

According to a comprehensive study conducted in 1998 by CC Technologies, corrosion to the US economy was \$276 billion or 3 % of the 1998 GDP (FHWA-RD-01-156). From that amount, \$121 billion was spent on corrosion control and \$107 billion was spent on protective coatings alone. CC Technologies reported that better corrosion protection could save up 40% of that cost. Improved practices for corrosion protections are: coating quality control and effective inspection at time of coating application; routine/periodic coating inspection during the service life of the structure; an appropriate repair action when coating degradation or delaminate or substrate corrosion is detected. Currently Federal guidelines hold contractors responsible for coating quality. However there is no federal guideline or other practical methodology for evaluating a protective coating quality and subsurface condition.



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The full report is available for a free download at the UTRC website:
<http://www.utrc2.org/sites/default/files/pubs/Final-Subsurface-Imaging.pdf>

FREIGHT TRICYCLE OPERATIONS IN NEW YORK CITY

PIs: Dr. Alison Conway, Dr. Camille Kamga
Institution: CCNY, CUNY
Sponsor(s): NYSDOT, NYSERDA & UTRC

As cities become more congested and increasingly focused on sustainability, cargo cycles offer a potential alternative to motorized vehicles for local and last-mile goods delivery. However, few studies have examined this mode in the North American context. This project seeks to address this existing gap in research on cargo cycles/freight tricycles in North America and in New York City (NYC). The goals of this project are: (1) to understand the potential commodities moved and sectors served by cargo cycles; (2) to identify the expected benefits, challenges, and barriers to operation for cargo cycles operating in NYC; (3) to understand freight tricycle traffic performance in NYC conditions; and (4) to understand the capability of cargo cycles for use in cold chains - such as food and pharmaceutical delivery - that require temperature control.



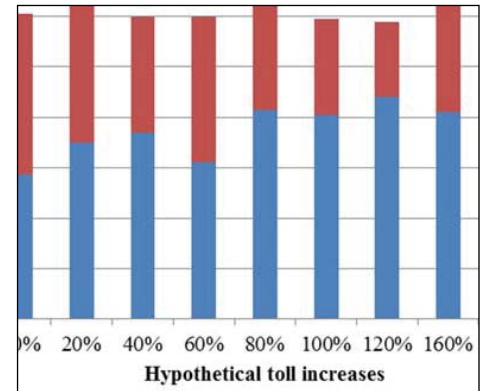
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The full report is available for a free download at the UTRC website:
<http://www.utrc2.org/sites/default/files/pubs/Final-Freight-Tricycles-NYC.pdf>

ASSESSING BEHAVIOR CHANGES UNDER THE INFLUENCE OF TRAVEL DEMAND MANAGEMENT STRATEGIES

PI: Dr. Xiaokun (Cara) Wang
Institution: RPI
Sponsor: UTRC

In order to achieve an efficient transportation system, proper demand management strategies are more critical than increasing facility capacity. Previous studies suggest that most of the strategies have substantial impacts on traffic pattern and travel behaviors, but the effects may not be exactly the same as they were initially expected to be. This project focuses on assessing travel demand management strategies to enhance such understanding. Among the existing research, users' behavior in freight transportation is relatively under-investigated, because the empirical data collection is difficult. Therefore, this project fills the void by analyzing exclusively on freight carriers' behavior changes in response to freight travel demand management strategies. A survey was conducted and a regression model was established to provide important insights into the behavior problem.



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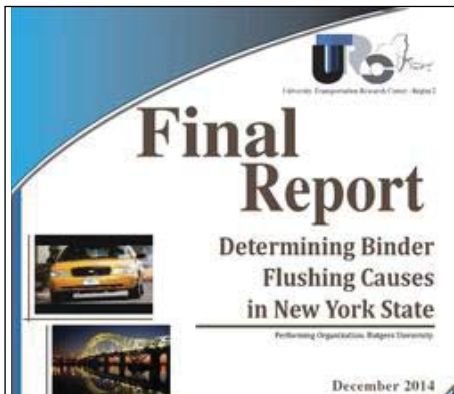
The full report is available for a free download at the UTRC website:
<http://www.utrc2.org/sites/default/files/pubs/Final-Assessing-Travel-Behavior.pdf>

COMPLETED PROJECTS

THE EFFECTS OF PUBLIC-PRIVATE PARTNERSHIPS ON TRAFFIC SAFETY: EVIDENCE FROM MEXICO

PI: Dr. Rick Geddes
Institution: Cornell University
Sponsor: UTRC

The use of public-private partnerships (PPPs) worldwide to facilitate private-sector participation in a variety of transportation infrastructure delivery tasks is growing. Tasks increasingly allocated to the private sector include the design, construction, operation, maintenance, and financing of large transportation facilities. Although academic literature on PPPs is burgeoning, there has been little empirical examination of the effects of private operation and maintenance of roads on road safety. We help to address that gap by constructing a large dataset on privately managed roads in Mexico.



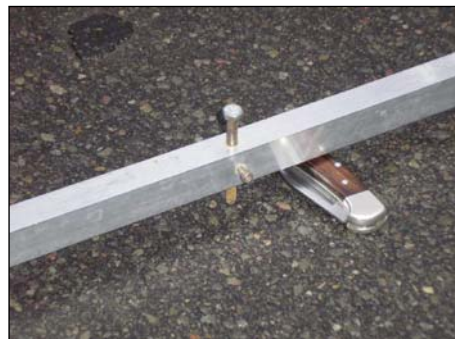
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<http://www.utrc2.org/sites/default/files/pubs/Final-PPP-Traffic-Safety.pdf>

DETERMINING BINDER FLUSHING CAUSES IN NEW YORK STATE

PIs: Dr. Thomas Bennert
Institution: Rutgers University
Sponsor(s): NYSDOT & UTRC

In 2007, a number of asphalt pavements in New York State flushed. An extensive forensic and laboratory investigation was conducted to determine why particular New York State asphalt pavements constructed in 2007 had undergone “atypical” flushing. Analysis of quality control records, laboratory characterization of field cores, and a laboratory mixture evaluation component were conducted to help best determine the potential reasoning for unexpected pavement flushing.



Pavement Rutting in Flushed Pavement Areas in Region 3

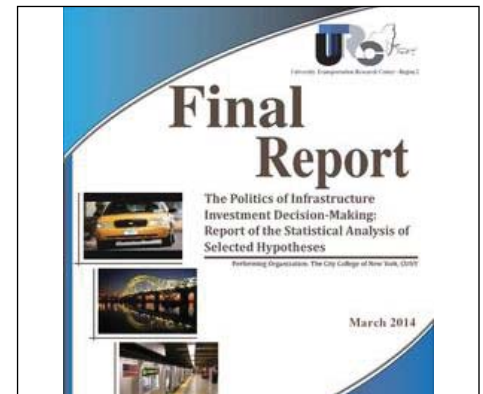
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<http://www.utrc2.org/sites/default/files/pubs/Final-Binder-Flushing-Causes-NYS.pdf>

THE POLITICS OF INFRASTRUCTURE INVESTMENT DECISION-MAKING: REPORT OF THE STATISTICAL ANALYSIS OF SELECTED HYPOTHESES

PI: Dr. Joseph Berechman, Dr. Patrizia Nobbe
Institution: CCNY, CUNY
Sponsor: UTRC

The objective of a statistical analysis of the politics of mega-project decision-making is to examine political and other project indicators and compare their impact on project decisions and performance. To our knowledge, no statistical analysis that establishes systematic political patterns across international, multi-type transportation mega-projects exists. Hence we developed an extensive database with relevant variables.



ON THE WEB

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<http://www.utrc2.org/sites/default/files/pubs/Final-Politics-of-Infrastructure-Investment.pdf>

PUBLICATIONS

Four recent publications by UTRC researchers:

- Kamga, C., (2015) Emerging Travel Trends, High-Speed Rail, and the Public Reinvention of U.S. Transportation; Transport Policy, Volume 37, pp. 111-120.
- Singhal, A., Kamga, C., Yazici, A., (2014) Impact of weather on urban transit ridership Transportation Research Part A – Policy and Practice, Vol 69, pp. 379-391.
- Kamga, C. and Yazici, M. A. (2014) Achieving Environmental Sustainability Beyond Technological Improvements of Existing Transportation Modes: A Role for High-Speed Rail in the United States of America; Transportation Research Part D, Vol 31 pp.148-164.
- Kamga, C., Yazici, M. A. (2014) Temporal and weather related variation patterns of urban travel time: Considerations and caveats for value of travel time, value of variability, and mode choice studies. Transportation Research Part C – Emerging Technologies, Vol 45, pp. 4-16.

CALL FOR ABSTRACT

University Transportation Research Center's 3rd Annual Transportation Technology Symposium: Innovative Mobility Solutions

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 and public policy-making implications.

Presentations are welcome to explore how cutting-edge intelligent transportation systems, big data aggregation, and innovative transportation technology solutions promote efficiency, safety, security and sustainability goals, as well as the impact on broader inter-modal and multi-modal transportation considerations.

Future and forward thinking innovative concepts are encouraged, and the pragmatic political reality of various movements (such as climate change/ environmental policies and safety initiatives for reduced traffic fatalities), should be analyzed to ascertain whether society is ready to keep pace with the implementation of such technology.

We invite submissions for presentation on a broad range of topics consistent with the above guidelines. The following items are just some examples of possible topics that would be responsive to this call, but submissions are not intended to be limited to any of the following:

(1)- Autonomous and Connected Vehicles and Alternative Fuel

Autonomous vehicles or driverless cars, as well as connected vehicle technology (Vehicle to Vehicle [V2V], Vehicle to Passenger [V2P] and Vehicle to Infrastructure [V2I] communications technology) to provide real-time safety benefits to pedestrians and drivers; real-time On-Board Diagnostics (OBD) data collection, transmission and applications; and alternative fueled and zero emissions vehicles (hybrid-electric, propane, compressed natural gas, flex-fuel and electric vehicles).

(2)- Smartphone Technology Applications:

The use of smartphone applications and other data-sharing platforms, transportation planning, universal apps and aggregation services in the private for-hire vehicle ground transportation sector (including taxicab, livery, black car/sedan, paratransit, commuter van, shared-ride and limousine sub-modes); the innovative use of smartphone applications across public and private modes, to navigate mass transit, facilitate and manage parking.

(3)- Safety Technology Initiatives:

The use of black boxes (g-force sensors and other related devices coupled with in-vehicle cameras) to record vehicle movement data or actual motor vehicle accidents; vehicle telematics; collision avoidance systems; Global Positioning System (GPS) devices, capabilities and applications to public and private transportation (for-hire vehicles, buses and trains); the use of red light and speed cameras on public streets; Bus Rapid Transit and technology enhancements to facilitate safety and performance; rail technology developments; driver assist systems and traffic signal priority controls; school, tour and charter bus safety, parking and location applications; technology dispatch systems to more efficiently deploy accessible public paratransit vehicles to service the disabled passenger community; and the collection and use of data from all such devices and modes, as well as benefits to the insurance industry and consumers.

(4)- Data - Security, Privacy, Collection, Modeling & Analysis:

The collection, use, modeling and analysis of various forms of big transportation data from GPS/GIS systems, as well as vehicle and transportation infrastructure sources; applications of such data analysis for improving public and private transportation operations, regulations, policies, real-time traffic patterns and the identification of trends; security and privacy issues surrounding the collection and use of data by private companies as well as government agencies.

Guidelines for Submission

Abstracts Due: Aug 14, 2015

Acceptance by: Sept 30, 2015

Please submit the requested information via email in MS Word format to:
transptechsummit@utrc2.org

Please make sure to include the following information in your submission:

- * Author's Name & Title
- * Institution, Organization/Agency Name
- * Author's Contact Information: Email Address &Phone Number
- * A Brief Biography of the Author
- * Abstract: 250 words (Max 300)

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