

**RESEARCH NEWS**  
**FALL 2015**

# **UNIVERSITY TRANSPORTATION RESEARCH CENTER REGION 2**



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 **NEWS & NOTES**

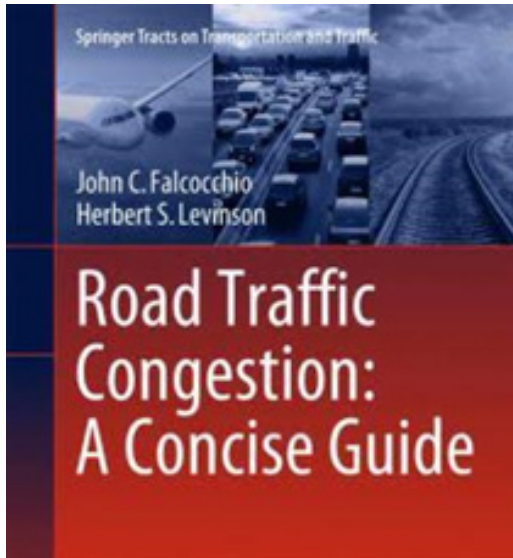
 **EDUCATION**

 **UPCOMING  
EVENTS**

 **PAST EVENTS**

 **RESEARCH**

## UTRC BOARD CHAIRMAN, DR. JOHN C. FALCOCCHIO AND UTRC'S ICON MENTOR, HERBERT S. LEVINSON'S NEW BOOK ON ROAD TRAFFIC CONGESTION: A CONCISE GUIDE



Dr. John C Falcocchio, Professor at NYU Polytechnic School of Engineering and Herbert Levinson, UTRC's Icon Mentor jointly published a book, titled "Road Traffic Congestion: A Concise Guide." This book describes the causes, characteristics, and consequences of road traffic congestion and describes effective supply adaptation and demand mitigation strategies to relieve recurring and nonrecurring congestion in cities and suburbs.

The book will be useful for a wide audience – including students, researchers, and practitioners in a variety of professional endeavors including: traffic engineers, transportation planners and engineers, urban planners, public administrators, and private enterprises that depend on transportation for their activities.

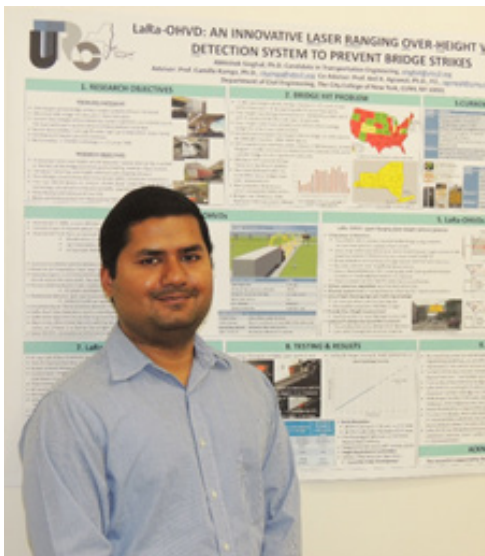
The book is available for purchase at:

<http://www.springer.com/us/book/9783319151649>

## UTRC ICON MENTOR AND INSTITUTE OF TRANSPORTATION ENGINEERS' (ITE) HONORARY MEMBER; HERBERT S. LEVINSON WAS FEATURED IN THE ITE's JOURNAL ON CROWDSOURCING TRANSPORTATION CHOICES – MAY 2015 EDITION

UTRC Icon Mentor, Herbert Levinson was featured in the 2015 May Edition of ITE Journal which explores many of the future transportation challenges. He was featured, both through the member profile and as the contributor of an op/ed column titled, "To Build or Not to Build: Some Historical Perspectives". With his career spanning half a century, Herb is a key contributor to the profession's technical body of knowledge and is widely recognized as one of the pioneers of transportation engineering practice & transportation planning. To read his full member profile and to access the Op/Ed column, please visit ITE's website: <http://www.ite.org/itejournal/> (Please note that a subscription is required to access those journals).

## UTRC SPONSORED THE 2015 ITS-NY BEST STUDENT PAPER ESSAY AWARD



UTRC has sponsored the 2015 ITS-NY Best Student Paper Essay award. This year's winner was **Abhishek Singhal**, a Ph.D. candidate at the City College of New York, CUNY. The winner was announced at the ITS-NY 22nd Annual Meeting and Technology Exhibition in Saratoga Springs, NY, held on June 11-12, 2015. His winning essay entitled, "**LaRa - OHVD: An Innovative Over-Height Vehicle Detection System to Protect our Bridges to Prosperity**" has been selected as the Winner of the ITS-NY 2015 Best Student ITS Paper Competition. The paper describes a new over height vehicle detector designed and developed by Mr. Singhal as part of his Ph.D. dissertation which combines concepts from traffic, optical and electrical engineering to detect fast moving over height vehicles.

Mr. Singhal, currently a Ph.D. candidate (specializing in Transportation Engineering) in the Department of Civil Engineering at City College of New York is also a Research Assistant at the Region 2 University Transportation Research Center at City College. Mr. Singhal holds a M.S. in Electrical Engineering from CUNY and B.S. degree in Electronics Engineering from Pune University in India. He works with Dr. Camille Kamga and Dr. Anil Agrawal at the City College of New York. His research interests are in the area of Intelligent Transportation Systems, System Engineering, Smart Cities, Sensors, Analysis of Big Transportation data like GPS taxicab records, Public Transit, Sensors & Transportation Safety & Policy. He has six refereed journal publications, along with several others under review, and refereed conference proceedings. Mr. Singhal will graduate in January, 2015.

In addition to a networking experience with transportation experts, Mr. Singhal received a scholarship along with a complimentary 2015 ITS-NY Annual Meeting registration, travel and lodging benefits to attend all technical sessions presented at the Annual meeting.

## UTRC FUNDED RESEARCH PROJECT'S HIGHLIGHT

### NEW YORK STATE FAIR USING VIDEO FOR IMPROVING TRAFFIC OPERATIONS

By Jeffrey Wojtowicz and Dr. William (Al) Wallace, Rensselaer Polytechnic Institute



The research team at Rensselaer Polytechnic Institute's (RPI) Center for Infrastructure, Transportation and the Environment (CITE) has spent two consecutive years at the NYSF collecting large amounts of traffic data and building a highly detailed traffic micro-simulation model of the area. A conversation with a lead NYS Police Sergeant, led to the development of a new technique to effectively train the Troopers in traffic management. This technique was to create short video clips of previously collected video footage at key locations to provide the officers with a picture of what to expect and how the traffic management should and should not happen.

Instead of police officers receiving verbal instructions on how to carry out their duties, they were able to be visually shown via these short video clips. The figure on the left shows a screenshot for the website that was created for this project. The website contains a

static map of the NYS Fairgrounds and is color coded based on the various parking lots, the parking lot colors are easily recognizable item for people involved with traffic management during the Fair including the police officers and traffic management personnel. On the website there are key locations identified that can be clicked to reveal the links to the video clips. This platform was made in an online version which can be accessed at <http://transp.rpi.edu/~NYSF/index.htm> and an off-line version that could be loaded on to a tablet. The reason the off-line version was created was to make sure the officers could view the materials even if an internet connection was not available which could be the case while they were working at the Fair.

The video clips used for this project were collected for other purposes during the previous Fair efforts but were recycled for this proof of concept project. This project is a demonstration of how resources from a previous project can be used to support a new research concept - with minimal investment.

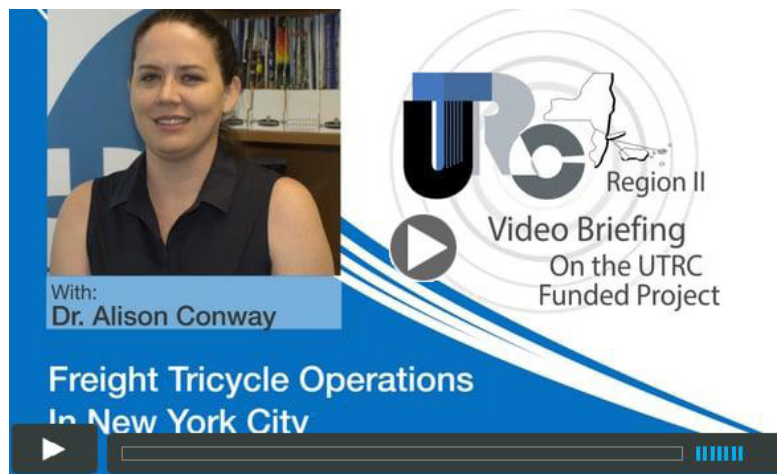
## DR. ALISON CONWAY, UTRC'S ASSOCIATE DIRECTOR FOR EDUCATION AND AN ASSISTANT PROFESSOR AT CCNY RECEIVED THE 2015 OUTSTANDING YOUNG MEMBER AWARD FROM THE ASCE T&DI

Dr. Alison Conway, an Assistant Professor at the City College of New York received the 2015 Outstanding Young Member Award from the ASCE Transportation and Development Institute (T&DI). The award was given during the Met Section Dinner that took place on June 18. This award acknowledges the candidate's service to the advancement of the profession; evidence of technical competence, high character, and integrity; Leadership in the development of younger member attitudes toward the profession; and contributions to public service outside of their professional career. *"Congratulations to Dr. Conway for her distinguished achievements"*

## UTRC VIDEO BRIEFING ON COMPLETED RESEARCH PROJECT

UTRC also released a video briefing on the NYSDOT, and UTRC/USDOT funded project, "Freight Tricycle Operations in NYC". This relatively new UTRC initiative is a technology transfer tool that will be used to disseminate research results of completed projects to researchers. The video is posted on the project's website at:

<http://www.utrc2.org/research/projects/freight-tricycle-operations-NYC>





## SEPTEMBER 11TH MEMORIAL PROGRAM-2015-16 AWARDS

The NYMTC/September 11th Memorial Program Academic Initiative entered its tenth year of the program in September 2015. In August, a selection committee comprised of representatives from NYMTC and its members awarded two students with internship positions for the 2015 – 2016 academic year. The awardees are:



### **Sabiheh Faghih, Ph.D. candidate, Civil Engineering (Transportation), CCNY/CUNY**

Internship Supervisor – Lynee Thisse, Model/Data/Survey Coordinator , NYMTC

Faculty Adviser: Camille Kamga, Ph.D., Assistant Professor Civil Engineering and Director, UTRC

**Internship Topic: Challenges of Conducting Surveys for Activity-Based Travel Demand Models**

Sabiheh Faghih is a PhD student in Transportation Engineering, at City College of New York. Her internship is with NYMTC and she will work closely with NYMTC Technical Group to help to identify and overcome “Challenges of Conducting Surveys for Activity-Based Travel Demand Models”. The three important surveys that are used for data collection are the Household travel survey, Establishment survey and Visitor survey. This project will focus more on identifying the resources - including staffing, budget and sample sizes– that are required for these surveys to collect data that can be properly integrated into activity-based models.

Ms. Sabiheh Faghih has received her M.S. in Transportation Engineering on January 2012 from Sharif University of Technology, and has been admitted to our Ph.D. program through an extremely competitive selection process. Ms. Faghih’s record in transportation modeling and analysis has been outstanding. Advanced and cutting-edge research in these areas is urgently needed to advance our knowledge on modeling traffic, network analysis, and travel behavior to better manage our transportation systems.



### **Di Liu, Master’s candidate in Masters Program of Public Administration at NYU**

Internship Supervisor: Jan Khan, Manager, Regional Planning , NYMTC

Faculty Adviser: Zhan Guo, Ph.D., Professor of Urban Planning and Transportation Policy, Wagner School of Public Service, NYU

**Internship Topic: Developing an Action Plan to Link Environmental and Transportation Planning**

Di Liu, a second-year Master’s of Public Administration with concentration on policy, will intern at NYMTC to develop an action plan to link environmental and transportation planning. Di got her dual Bachelor’s degree from Peking University in Beijing, China, majoring in English Literature and Economics. During her undergraduate studies Di has interned and conducted policy research at various central Chinese government agencies, including National Development and Reform Commission, Development Research Center of the State Council, and State-owned Assets Supervision and Administration Commission. With a strong interest in energy and environmental policies and international relations, Di looked into issues like energy security, energy geopolitics, power sector reform, renewable energy policy through her internship and researches. She is going to write a guidebook to address environmental issues in the transportation planning process of New York City, Long Island and Lower Hudson Valley during her stay at NYMTC.

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The New York Metropolitan Transportation Council (NYMTC) established the September 11th Memorial Program for Regional Transportation Planning to honor the memory of Ignatius Adanga, Charles Lesperance, and See Wong Shum, the three employees it lost during the attack on the World Trade Center. The program was established to educate and motivate people interested in transportation technology and planning and to encourage innovations in planning activities throughout the NYMTC region. The Program's Academic Initiative is designed to foster the academic and professional development of students by providing them with opportunities to participate in innovative research and planning projects. It is administered by the University Transportation Research Center (UTRC).

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## UTRC AWARDS 2015 AITE SCHOLARSHIPS

UTRC's AITE Scholarship program aims to increase the knowledge and capabilities of transportation professionals by providing master's level education in transportation and related fields. The program provides scholarships to full-time students as well as to agency employees endeavoring to increase their knowledge and skills at UTRC member Universities. The program requires matching resources to be contributed either by the participating university for full-time student recipients, or by the employer agency for employee applicants.

Eight scholarships were awarded in June 2015 for the Fall 2015 semester. Detailed information on the Fall 2015 AITE Scholarship recipients is provided below.



**Anita Ahmed**

New York University

Anita Ahmed is pursuing a Master of Science degree in Applied Urban Science and Informatics (MAUSI) at NYU-Centre of Urban Science and Progress (CUSP). Anita has a bachelors in Mechanical Engineering from Ryerson University in Toronto, Canada and is currently working as a Mechanical Systems Designer at MTA-New York City Transit (NYCT). Her current position at NYCT has allowed her to develop an understanding of how large cities respond to urban challenges like population growth and maintenance. While she has learned a lot in this position, she believes that with advanced education and training, she could be of greater service to the transit system. Anita's academic and professional experience has guided her to determine that her true interest is to specialize in an area that combines the application of mathematics, statistics, computer programming and urban development. Through her graduate work, Anita will learn how to work with big data set at all stages of data lifecycle from acquisition to visualization. She will learn about data acquisition and management, integration and analytic skills, data optimization and simulation modeling and be better at decision making by developing problem-solving methods using basic modelling and analytical methods. Anita will also be able to utilize data to better understand transportation system and operation and will acquire the technical skills to learn about critical problem solving methods that can be applied to address the fundamental problems and challenges of transportation operation, planning, and policy development. Being able to apply data analytics to improve urban transportation, that could potentially affect the lives of millions of NYC commuters every day, would be her ultimate career achievement.



**Eamonn Grant**

New York University

Eamonn Grant is currently enrolled in the Masters of Science in Transportation Planning and Engineering program at NYU Polytechnic. During his studies, Eamonn will be introduced to modern techniques used to design some of the nation's busiest transportation networks. Courses will also focus on methods used to plan operating schedules to ensure commuters will have reliable routes to travel on. Eamonn is currently employed full time by MTA New York City Transit as a signals engineer. The AITE Scholarship has given him a great opportunity to propel his career in the always important field of transportation.



**Kievel Hall**

New York University

Kievel Hall is pursuing a Master of Science Program in Civil Engineering at the New York University Tandon School of Engineering with emphasis on transportation, construction engineering and management. The overall objective of this program is to address the need for highly qualified professionals who are trained to respond effectively to the strain on the built environment resulting from the rapidly growing population. This of course entails improving existing systems and designing projects that answers the new challenges raised by modern society.

The program covers courses that add up to 30 credit hours, including Intelligent Transportation Systems and Their Applications, Multimodal Transportation Safety, Introduction to Urban System Engineering, Instrumentation Monitoring and Conditional Assessment of Civil Infrastructure, Construction Scheduling, Project Management for Construction and engineering for construction I and II. Mr. Hall works as an Assistant Civil Engineer in the Civil/ Structural Engineering Sub-division of the Capital Program Management Department of New York City (NYC) Transit. This Master's degree program will provide the requisite knowledge and training that will help him to become a sound leader in the profession and will also enhance his skills in planning, designing and building excellent capital projects that satisfies the needs for improving and rebuilding the NYC Transit Capital Infrastructure.



**Md Irfanul Mostafa**

The City College of New York,  
CUNY

Md Irfanul Mostafa is currently working at the New York State Department of Transportation and is pursuing a Master's degree in Civil Engineering at The City College of New York. As a member of the Traffic, Safety and Mobility unit in NYSDOT, his most important career goal is to continue making contributions that save lives, prevent injuries and reduce economic costs due to road traffic crashes. Md is involved in many NYSDOT projects relating to development in traffic planning, safety measurement and transportation system. Their focus is always on roadway safety and developing network capacity with growing transportation demand. Md would further like to explore the transportation intelligent system for safety, as this would be an effective measure for improvement in transportation.



**Katie O'Sullivan**

University at Albany, SUNY

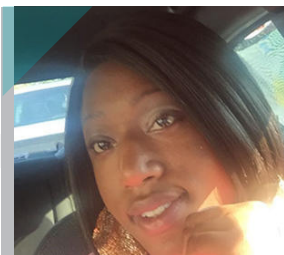
Katie is in her second year of the Masters in Regional Planning program at the University at Albany. Through her studies and career, she hopes to contribute to transportation policy that connects land use supporting travel by non-motorized modes and transit. She received a bachelor's degree in Geography from McGill University, and has amassed diverse work experience in planning, research, and policy analysis with the Minnesota Department of Transportation, the consulting firm IBI Group, the New York Office of Children and Family Services, an MPO in Vermont, a Community Foundation, as well as freelance GIS contracts with several nonprofits. Her research will evaluate the effectiveness of efforts to encourage transit-oriented development (TOD). This work will integrate a literature review of TOD policies and programs with statistical analysis of outcomes among localities that have implemented each TOD approach, including percent changes in transit ridership, vehicle miles travelled, and population density around transit stations from 2000 to 2010.



**Matthew Rosenbloom-Jones**

University at Albany, SUNY

Matthew Rosenbloom-Jones is currently enrolled in the graduate planning program at SUNY Albany with a concentration in transportation. His specific interests lie in, but are not limited to, mass transit and rail. In his time at SUNY Albany, he has continued to develop his interests in the field of transportation, serving as one of two SUNY Albany members of the Capital District Transportation Authority's sustainability council. This past summer, Matthew had a wonderful experience interning in Metro North's strategic development department, where he worked on benchmarking, KPIs and many other projects. Matthew's specific research interests are commuter/regional rail and fixed route bus transit, specifically how to find cost effective ways to provide high quality service to exurban, semi-rural and rural areas.



**Monique Thompson**

New York University

Monique Thompson is currently pursuing a Master of Science Degree in Transportation Management at Polytechnic School of Engineering. Her undergraduate degree is in Business Administration with a concentration in Management from Berkley College in White Plains, New York. Her professional background is in the field of Transportation and Procurement. Currently, Monique works for New York City Transit which is an agency within the Metropolitan Transit Authority for the Department of Material, Capital Procurement Program. One of her main goals is to understand how the Transit Authority and other Transportation agencies work. She hopes to one day play a major role in the field of Transportation and recently received a scholarship from the National Institute of Governmental Purchasing. Monique hopes that graduating from New York University Polytechnic School of Engineering opens up her career up to more opportunities.



**Shenuque Tissera**

Hunter College, CUNY

Shenuque Tissera is a graduate student at Hunter College, where he is studying for his M.A. in geography. He will be working under Professor Hongmian Gong while he develops his thesis on bike sharing in New York, Boston, and Washington DC. In the end, he hopes to uncover the user demographics and consumption patterns of American bike share programs. He hopes that this analysis will help with the expansion and development of American bike share programs. Shenuque's past research on New York Citi Bike with Dr. Jonathan Peters has given him the background in the area that will allow him to connect the other bike sharing systems. Shenuque is also working with Dr. Michael Kress and Dr. Caitlyn Nichols on creating a go to high ground flood evacuation model for cars on Staten Island. Shenuque will take classes in geography, GIS, and economics to help pursue his research.



# UTRC Faculty Profile

## DR. NADA MARIE ANID

Dean, School of Engineering and  
Computing Sciences (SoECS)

New York Institute of Technology

Email: [nanid@nyit.edu](mailto:nanid@nyit.edu)

**Nada Marie Anid**, Ph.D., is the first female dean of NYIT's School of Engineering and Computing Sciences (SoECS). In this role, she oversees over 80 engineering and computing sciences faculty members and approximately 3,500 graduate and undergraduate students at campuses located in Manhattan and Old Westbury, N.Y., China, the Middle East, and Vancouver.

Dr. Anid embraces NYIT's forward-thinking and applications-oriented mission and is working on several strategic partnerships between the School of Engineering and the public and private sector, including the School's Entrepreneurship and Technology Innovation Center and its labs in the critical areas of IT & Cyber Security, Bio-engineering and Health, and Energy and Green Technologies. The Long Island Business News named her one of the top 50 most influential women in business in recognition of her business acumen, mentoring, and community involvement and as a third-time honoree, she was inducted into the LIBN Hall of Fame. She also received a 100 Inspiring Women in STEM Awards by Insight to Diversity Magazine.

Anid is committed to educating a new generation of engineers ready to address societal challenges identified through national initiatives including the White House Strategy for American Innovation, the National Academy of Engineering Grand Challenges for Engineering, and the U.N. Millennium Development Goals. She leads several sustainability education initiatives, such as the NSF-funded project A Novel Multidisciplinary, Multi-campus Under-graduate Minor to Enhance STEM Learning in Energy Science, Technology and Policy and oversees the transportation research agenda, including the projects "Secure and Private Sensing for Driver Authentication and Transportation Safety," "Traffic Prediction using Wireless Cellular Networks," and "UTRC Education and Technology Transfer: Transportation Innovation Series."

Dr. Anid has also worked diligently to create a common platform for international research collaborations and joint projects. She co-leads the US-China EcoPartnership collaboration "EcoPartnership on Groundwater Monitoring, Protection, and Training" with Peking University. Since 2013 the EcoPartners have convened experts in the field of sustainability and the water, energy and food nexus in Beijing, including the conference "The Water Energy Nexus: Sustainability and Global Challenges" and the NSF-funded workshop "Clean Water Matters: Challenges and Research Perspectives," both in 2014, and the 2015 conference "Sustainable Megacities: Food, Energy, Water, and the Built Environment" and NSF-funded workshop: Food, Energy, and Water Nexus in Sustainable Cities. She also served as NYIT's PI on a "Pathway to Cleaner Production through Latin America" project, funded by the Higher Education Development in collaboration with Illinois Institute of Technology and seven academic institutions across Latin America. The project's



primary goal has been to facilitate the transition to sustainable industrial development in Latin America and the Caribbean, through multidisciplinary education and university-industry partnerships.

Dr. Anid is a board member of several organizations including the Greater Long Island Clean Cities Coalition, the Institute for Sustainability of the American Institute for Chemical Engineers (AIChE), the Riverdale Conservancy, and the Environment and Public Health Network of Chinese Students and Scholars. She is a Program Evaluator for the Engineering Accreditation Commission of the Accreditation Board of Engineering and Technology (ABET), and holds leadership positions in AIChE, and the American Society for Engineering Education. She serves for editorial boards at the Journal of Environmental Progress and Sustainable Energy and a technical reviewer for the federal government (Dept. of Defense, National Science Foundation) and Environmental Science and Technology, the AIChE Journal and the Energy and Fuels Journal.

Dr. Anid earned her Ph.D. in environmental engineering from the University of Michigan, and bachelor's and master's degrees in chemical engineering from the Royal Institute of Technology (KTH-Stockholm). Prior to joining NYIT, she was chair and graduate program director of the Chemical Engineering Department at Manhattan College.

# UPCOMING EVENTS

## NJDOT RESEARCH SHOWCASE

October 28, 2015 at The Enterprise Center at RCBC, (Rowan College at Burlington County)



The 17th Annual NJDOT Research Showcase is an opportunity for NJDOT customers to experience the broad scope of ongoing research initiatives, technology transfer activities, and academic research being conducted by university research partners and their associates. This event also serves to showcase the benefits of the NJDOT Research program. Part of this event is the presentation of an annual implementation award, as well as recognition of an outstanding university student studying in a transportation-related field. Our agenda will include a general session, topical breakout sessions, and a poster display area.

This year, the event is being held at a new location so that it may accommodate a larger audience. The new venue is the Enterprise Center at Rowan College at Burlington County, which is located in Mt. Laurel, NJ.

### ON THE WEB

To register for this event, Please visit the CAIT, Rutgers website at:  
<http://cait.rutgers.edu/cait/17th-annual-njdot-research-showcase>

## UTRC IS CO-HOSTING THE TRANSPORTATIONCAMP NYC 2015

November 14, 2015 at City College of New York, CUNY



Our goal is to assemble planners, software developers, engineers, students, dreamers, and professionals for an exciting day of “un-conferencing.” Unlike a traditional conference, the specific session topics are determined by participants, which provides each attendee an opportunity to lead and shape the event. Therefore, we want to see what you are doing; we want to ask how it will impact our lives; and we want to help you to find answers.

Registration for TransportationCamp NYC 2015 is **now open**. Tickets are limited, so get yours now! If you have any questions, reach out at [nyc.transportationcamp.org](http://transportationcamp.org) or at [@transpocamp](https://twitter.com/transpocamp). See you November 14, 2015!

Media inquiries: Please contact [nyc@transportationcamp.org](mailto:nyc@transportationcamp.org).

Do you love transportation? Do you love New York City? TransportationCamp New York City 2015 will be held on Saturday, November 14, 2015 at [City College of New York](#). Following on the success of [TransportationCamp East in 2011](#), [Planning Camp NYC in 2013](#) and TransportationCamps across the country, we’re bringing it back to New York City. TransportationCamp NYC 2015 will continue to foster open conversation and collaboration between all parties interested in mobility and the radical changes the near-future promises in transportation.

### ON THE WEB

To register for this event, Please visit the TransportationCamp NYC 2015 website at:  
<http://transportationcamp.org/events/nyc-2015/>



## UTRC WILL HOST THE 3RD ANNUAL TRANSPORTATION TECHNOLOGY SYMPOSIUM: TRANSPORTATION TECHNOLOGY SYMPOSIUM: INNOVATIVE MOBILITY SOLUTIONS

*November 20, 2015 at New York Institute of Technology*

After two successful conferences, UTRC will continue hosting the tech summit. The 3rd Annual Transport Tech Summit will take place on November 20, 2015 at the New York Institute of Technology.

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. Presenters will explore 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.

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), would be analyzed to ascertain whether society is ready to keep pace with the implementation of such technology.



### ON THE WEB

To register for this event, Please visit the event's page at UTRC website:

<http://utrc2.org/events/transportation-technology-symposium-innovative-mobility-solutions>

## UTRC WILL HOST THE 4TH CONNECTED & AUTONOMOUS VEHICLE CONFERENCE WITH CLOSE COLLABORATION WITH NYSDOT

*Dec 2-3, 2015 at the SUNY Polytechnic Institute at Albany*

UTRC will host its 4th Annual Conference on Connected & Autonomous Vehicle on Dec 2-3, 2015 at the SUNY Polytechnic Institute at Albany. This year's conference will be organized with a close collaboration of New York State Department of Transportation (NYSDOT). More details will be available on the UTRC's website soon.

## 2016 TRB ANNUAL MEETING

*Jan 10-14, 2016, Washington, DC*



The Transportation Research Board (TRB) 95th Annual Meeting will be held January 10-14, 2016, at the Walter E. Washington Convention Center, in Washington, D.C. The information-packed program is expected to attract more than 12,000 transportation professionals from around the world.

The meeting program will cover all transportation modes, with more than 5,000 presentations in nearly 750 sessions and workshops addressing topics of interest to all attendees—policy makers, administrators, practitioners, researchers, and representatives of government, industry, and academic institutions. A number of sessions and workshops will focus on the spotlight theme for the 2016 TRB Annual Meeting, Research Convergence for a Multi-Modal Future.

The full 2016 program, including information on all sessions, will be posted to this website in November 2015. Details regarding the more than 100 specialty workshops are [available online](#) now.

### ON THE WEB

For detailed information on the 95th TRB Annual Meeting, please visit the website:

<http://www.trb.org/AnnualMeeting/AnnualMeeting.aspx>

# PAST EVENTS

## UTRC ORGANIZED PRESENTATIONS AT NJDOT

UTRC, in collaboration with NJDOT, organized three presentations at NJDOT Headquarters:

**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

**October 8, 2015: Applications on Unmanned Aircraft Systems (UAS) for transportation operations.**

**Speaker:** Lawrence H. Brinker, Esq., Executive Director & General Counsel at Northeast UAS Airspace Integration Research Alliance

### Smartphone-Based Teen Driver Support System:

Results from a 300 Teen Driver Field Operational Test



**Event Date**  
Date: Tuesday, July 14th, 2015  
Time: 12:00pm - 1:30pm

**Event Location**  
The NJDOT Multi-Purpose Room  
(David J. Goldberg Transportation Complex)  
1035 Parkway Avenue  
Trenton, NJ 08625

**RSVP**  
Email to Paul Thomas at [paul.thomas@njdot.nj.gov](mailto:paul.thomas@njdot.nj.gov)

**Max Donath**  
Roadway Safety Institute  
University of Minnesota

Max Donath is a Professor of Mechanical Engineering and Director of the Roadway Safety Institute at the University of Minnesota, the federally designated Region 5 University Transportation Center.

Dr. Donath's efforts have been directed towards keeping the driver in the loop, using sensing, control and improved human-machine interfaces to reduce driver error, and thus prevent crashes before happen. He has led several major initiatives developing driver assist systems for: (a) smartphone based high accuracy DGPS and a conformal HUD allow the driver to "see" the road even in white-out condition; (b) bus drivers operating in bus-only shoulders - a haptic seat and steering wheel guide the driver in the narrow shoulder; (c) teenage drivers - a teen's smartphone provides real-time, in-vehicle feedback the teen about his or her risky driving behavior and reports the behaviors to parents via text message when the teen doesn't heed the system's warnings; and (d) reducing the high incidence of crashes at rural uncontrolled intersections. In a Stop Sign Gap Assist (SSGA) system, a Connected Vehicle application, infrastructure stations in road to determine safe-to-unsafe zone on the road and all the intersection.

### Workzone Operations, Planning and Safety

The Road from Research to Implementation

**Event Date**  
Date: Thur, July 23, 2015  
Time: 12:00pm - 1:30pm

**Event Location**  
The NJDOT Multi-Purpose Room  
(David J. Goldberg Transportation Complex)  
1035 Parkway Avenue  
Trenton, NJ 08625

**RSVP**  
Email Paul Thomas at [paul.thomas@njdot.nj.gov](mailto:paul.thomas@njdot.nj.gov)

**Speaker**  
  
**Kaan Ozbay**  
Professor,  
Department of Civil & Urban  
Engineering & Center for  
Urban Science & Progress (CUSP),  
New York University

This presentation will explore some of the major findings and outcomes of some of the work zone related research conducted in New Jersey in the last decade. First, work zone safety models estimated using NJ specific crash data will be discussed. Then, some of the innovative tools and approaches developed or currently under development to minimize impacts of work zones in NJ will be presented. The presentation will be concluded with an exploration of future opportunities such as the use of big data and emerging sensor technologies, in minimizing the operational and safety impacts of work zones in New Jersey.

**PRESENTED BY:**  
 UNIVERSITY TRANSPORTATION RESEARCH CENTER (UTRC)  
 NEW JERSEY DEPARTMENT OF TRANSPORTATION (NJDOT)

### Save the Date

## UNMANNED AERIAL VEHICLES

APPLICATIONS AND EMERGENT TECHNOLOGIES

**October 8th, 2015 | 12:00 pm to 1:30 pm**  
The NJDOT Multi-Purpose Room | David J. Goldberg Transportation Complex  
1035 Parkway Avenue, Trenton, NJ 08625  
**RSVP:** Email Paul Thomas at [paul.thomas@njdot.nj.gov](mailto:paul.thomas@njdot.nj.gov)

This presentation will be a free flowing discussion of the many civil and commercial uses of unmanned aerial vehicles (UAVs), commonly known as "drones" and the regulatory framework. The speaker will discuss the current and future potential of UAVs and will provide insight into infrastructure monitoring and inspection, package and cargo delivery, the evolution of the UAV market, and policy developments.

  
**Lawrence H. Brinker, Esq.**  
Lawrence H. Brinker, Esq. is an experienced pilot and aviation attorney currently serving as the Executive Director & General Counsel of the NJDOT Airspace, a Not-for-Profit corporation with over 70 public, private, and academic partners, managing the Griffin International Airport, FAA authorized, Unmanned Aircraft Systems Test Site in New York, Massachusetts, and Michigan. He is retired from the US Air Force with 25 years.

total active and reserve service. During his military career he attained the rank of Lt. Colonel and held various positions including: Command Pilot, Intelligence Officer, Operations Officer, Ethics Counsel, Congressional Liaison and Squadron Commander. Brinker is also a FAA rated Airline Transport Pilot with multiple type ratings and over 8000 international and domestic flying hours. He is an FAA rated flight engineer in turbojet aircraft. He also served as an FAA Aviation Safety Inspector (Air Carrier). He has served as legal and public policy advisor to private and public sector clients from around the world. He attended the US Naval Academy and graduated from The Citadel with a B.S. in Political Science. He earned an MBA from Southern Illinois University and a Not-for-Profit corporation with over 70 public, private, and academic partners, managing the Griffin International Airport, FAA authorized, Unmanned Aircraft Systems Test Site in New York, Massachusetts, and Michigan. He is retired from the US Air Force with 25 years.

**Presented By:**  
 NEW JERSEY DEPARTMENT OF TRANSPORTATION  
 UNIVERSITY TRANSPORTATION RESEARCH CENTER

## UTRC/NYMTTC SEPTEMBER 11TH MEMORIAL PROGRAM BROWN BAG SEMINAR

September 16, 2015 at NYMTTC



Ms. Dan Wan (Left) and Ms. Gauri Jumde (Right) (holding NYMTTC's logo) along with UTRC & NYMTTC staff at the Brown Bag Seminar

NYMTTC/UTRC September 11th Memorial Scholarship Program's interns gave their final presentations at a brown bag seminar at NYMTTC. The program was held at the NYMTTC office, 25 Beaver Street, New York, NY, 2nd floor, on September 16 from 12:00 PM - 1:00 PM. This year's presentations were: Customer Perception of Select Bus Service Enhancements, by Dan Wan from the Graduate Center, CUNY, working at City DOT; and Regional Bicycle - Pedestrian Handbook, by Gauri Jumde from NYU, Wagner, intern-ing at NYMTTC.



## UTRC SPONSORED A FREIGHT WORKSHOP IN NEW YORK CITY, ORGANIZED BY RENSSELAER POLYTECHNIC INSTITUTE

September 16, 2015 at New York Institute of Technology



On September 16, 2015 a workshop titled “Improving Freight Systems in Metropolitan Areas: From New York City to Across the Globe” was held. The purpose of the workshop was to bring the public and private sectors and researchers together to discuss and share ideas on strategies to improve freight activity in metropolitan areas. This workshop was hosted by Rensselaer Polytechnic Institute (RPI) and the New York Institute of Technology (NYIT) and was jointly sponsored by the VREF Center of Excellence for Sustainable Freight Systems (CoE-SUFS) and the University Transportation Research Center (UTRC).

Freight activity is a key contributor to the economy and quality of life but it is also a major source of congestion, air and noise pollution, and accidents. This workshop brought the public and private sectors and researchers together to discuss and share the ideas and strategies to improve freight systems.



### ON THE WEB

Click here for the agenda and presentations:

<https://coe-sufs.org/wordpress/nycfreightworkshop/>

## UTRC CO-SPONSORED AN INTERNATIONAL SYMPOSIUM ON PUBLIC PRIVATE PARTNERSHIP (P3) WITH CORNELL UNIVERSITY

September 15-16, 2015 in New York City

On September 15th and 16th, the Cornell University Program in Infrastructure Policy, or CPIP hosted the 4th Annual International Symposium on Public Private Partnerships in New York City. The Symposium brought together twenty world-renowned scholars of public-private partnerships from around the world under the theme of “Public Perceptions of Public-Private Partnerships.” Scholars from Copenhagen, Lisbon, Milan, Canada and many other countries attended. Fourteen academic papers were presented on important policy issues such as, “Why do countries differ in terms of government support for public-private partnerships? Explaining variations in PPP support in twenty European countries,” “Why do countries differ in terms of government support for public-private partnerships? Explaining variations in PPP support in twenty European countries”, and “Measurement Matters: Improving Infrastructure P3 Comparative Evaluation.”

Points emerging from the meetings include the need for more comprehensive benefit-cost analysis of projects to supplement standard value-for-money analysis, the importance of properly assessing the public sector’s cost-of-capital, and the need to engage the public early in the project development stage.





The 1½ days of academic meetings were followed by a half day of discussions with CPIP Advisory Council members, corporate sponsors, and key industry representatives. The event was possible due to generous support from Public Works Financing newsletter, Parsons Corporation, Sumitomo Mitsui Bank, and the Region 2 University Transportation Research Center.

### ON THE WEB

For more information on Cornell University Program in Infrastructure Policy, (CPIP), please visit:  
<http://www.human.cornell.edu/pam/cpip/>

## UTRC FACILITATED THE 2015 NYSDOT RESEARCH PEER EXCHANGE MEETING

*September 23-24, 2015 at Albany, NY*



From (L) to (R): Robert Sack, NYSDOT; Timothy Klein, OST/R,USDOT; Camille Crichton-Sumner, NJDOT; Marty Neveu, NYSDOT; Jane Minotti, NYSDOT; Valeriya Remezova, FHWA-NY; Lisa Tarson, PennDOT; Joseph Tario, NYSDOT; Deboarah Mooney, NYSDOT; Curtis Bradley, MassDOT; Matthew Hannon, NYSDOT; Gary Frederick, NYSDOT; and Camille Kamga, UTRC

UTRC facilitated a two days research peer exchange meeting for the New York State Department of Transportation (NYSDOT) on September 23-24, 2015 at the Marriott, Albany, NY.

The focus of this peer exchange was to share methods to delivering an effective State Planning and Research (SPR) program and discussions were arranged around the following topics:

- Key functions necessary to carry out an effective research program;
- How states currently deliver these key functions (e.g., within one program office, delivered with support from across the agency, out-sourced);
- What training is or should be provided to ensure staff have the necessary skills to effectively deliver the program;
- Experience/best practices/lessons-learned to share with others.

The exchange consisted of presentations and active discussions as the group worked to share key information about their involvement in creating an effective SPR research program and focused on the selection and management of research projects.

## UTRC CO-ORGANIZED THE 28th INTERNATIONAL ASSOCIATION OF TRANSPORTATION REGULATORS (IATR) 2015 ANNUAL MEETING | September 27, 30, 2015 at Montreal, Canada



IATR President, Matthew W. Daus (L) and UTRC Director, Dr. Camille Kamga (R) along with the Former NYS Governor, Hon. David Paterson at the 28th IATR 2015 Annual Conference in Montreal, Canada

UTRC staff actively participated in the organization and planning of the 2015 IATR annual conference, held from September 27-30, 2015 at Montreal, Canada. The conference was very well attended by international regulators and presenters shared their best state/city practices with attendees. The Former NYS Governor, Hon. David Paterson was the keynote speaker on the Tuesday Luncheon. The governor's keynote speech along with speakers' presentations and conference proceedings will be available to IATR members on the IATR website.



### ON THE WEB

For more information on the IATR organization and its membership, please visit the website:

<http://iatr.global/>

## UTRC HOSTED A VISITING SCHOLAR SEMINAR: INNOVATION & DISRUPTION IN URBAN MOBILITY WITH DR. SUSAN SHAHEEN FROM BERKELEY UNIVERSITY

OCTOBER 9, 2015 AT THE SUNY GLOBAL CENTER

Dr. Susan Shaheen, co-director of the Transportation Sustainability Research Center (TSRC) of the Institute of Transportation Studies at the University of California (UC), Berkeley presented at the UTRC Visiting Scholar Seminar on October 9, 2015 at the SUNY Global Center. She is also an adjunct professor in Civil and Environmental Engineering at UC Berkeley. The event explored 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. Much of this can be attributed to external forces (e.g., rise in smartphones, decrease in driver's license rates, socio-demographic changes, and recent economic decline), as well as the sharing economy (access to goods and services, which are rented or loaned, in contrast to ownership). Since 2010, there have been notable changes in the shared-use mobility arena, including ongoing growth in program memberships and fleet size, new entrants, and diversifying business models. 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 also discussed the current policy framework and how it is evolving to address these services.



From L to R: Penny Eickemeyer, UTRC; Dr. Camille Kamga, UTRC; Dr. Susan Shaheen, UC Berkeley; Nadia Aslam, UTRC; Dr. Robert E. Paaswell, UTRC/CCNY; and Dr. Mahdieh Allahviranloo, CCNY

### ON THE WEB

For speaker's presentation, event's video, and images, please visit the event's page at:

<http://utrc2.org/events/innovation-disruption-urban-mobility>



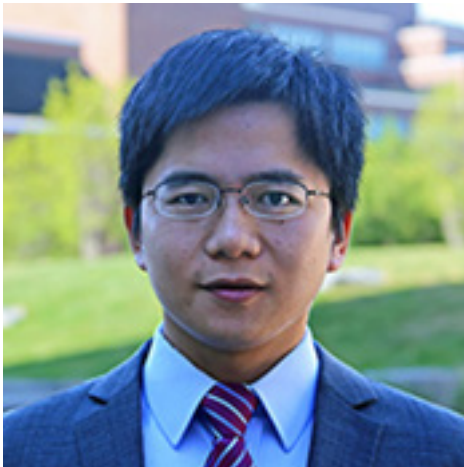
# News from the UTRC Consortium Faculty

## FOUR CCNY UNDERGRADUATE STUDENTS RECEIVED FHWA EISENHOWER FELLOWSHIPS

Four undergraduate students at The City College of New York received received FHWA Eisenhower Fellowships for the upcoming year. The \$30,000 total they received is the highest amount that CCNY has been awarded in a single year since the program started. The recipients are: Sallem Ahmed (\$10,000), Lisa Chauvet (\$7500), Medwin Chiu (\$7500), and Stefanie Reichman (\$5,000). Sallem is working on the NYSDOT Overweight Truck Project with Professor Michel Ghosn, Medwin and Lisa both work with Dr. Alison Conway on her freight-bike interaction research, and Stefanie works with Professor Ardavan Yazdanbakhsh on concrete materials.

## NEWS FROM THE INSTITUTE OF BRIDGE ENGINEERING (IBE)

### National Science Foundation (NSF) Award to Institute of Bridge Engineering's Teng Wu, Ph.D.



On July 23, 2015, The National Science Foundation awarded a grant of \$279,853 to the Institute of Bridge Engineering of the University at Buffalo for a project entitled "Structural Response in Transient Winds of Hurricanes and Downbursts" to be done under the direction of Dr. Teng Wu. This award starts September 1, 2015 and ends August 31, 2018.

The primary goal of the proposed research is to develop effective analysis tools to characterize and simulate the nonstationary wind-velocity fields and transient wind-load effects during non-synoptic events (e.g., downbursts and tornadoes) and hurricanes. A systematic time-frequency analysis and synthesis framework, which can integrate the time-invariant (traditional) and/or time-variant spatial coherence into the simulated nonstationary wind-velocity fields, will be developed. The framework will facilitate an understanding of the underlying physics of transient wind-load effects for wind-structure interaction analysis. The study will assess the impact of nonstationary wind inputs in terms of their static, quasi-static and dynamic effects on structural response, and investigate modification of aerodynamic parameters. Joint acceptance functions, based on the nonstationary wind fields with various spatial coherences, and their effects on structural response will be examined. The Hilbert and wavelet techniques will be employed for the analysis and synthesis of nonstationary wind-velocity fields, and their efficacy will be assessed. The nonstationary features of hurricanes, downbursts and tornadoes will be investigated using data from field measurements, experiments, and numerical simulations. The transient aerodynamics will be illustrated using flexible bridges, with results also being relevant to the assessment of buildings and other structures.

Teng teaches CIE 561 - Wind Engineering & Turbulent Flow.

### Executive Director Jerome O'Connor represented the Institute of Bridge Engineering at CITrans-III in San Jose, Costa Rica August 24-26, 2015.

Dr. Jerome O'Connor from the Institute of Bridge Engineering delivered a plenary address at Congreso Infraestructura de Transporte (Infrastructure and Transport Congress) entitled "Recent Developments in Bridge Engineering" which highlighted some of the innovative research and design/construction practices that are being used to improve safety as well as sustainability over a bridge's entire service life. Hazard mitigation, accelerated construction, and lifecycle cost of bridges were also touched on. The event was the third biennial conference hosted by the University of Costa Rica and the National Laboratory for Structural Materials and Models (LANAMME). There were 220 participants, including the Minister of Transportation, the two vice-ministers of Transportation, and the National Directors of Road Safety and Road Construction. The trip included a tour of the national material and structures lab and a discussion of potential academic and research collaboration with the University at Buffalo.



1 LANAMME Structural lab in Costa Rica with Jerome O'Connor, Esteban Villalobos and, Rolando Castillo



## 2nd Annual Advisory Board Meeting hosted by the Institute of Bridge Engineering (IBE)



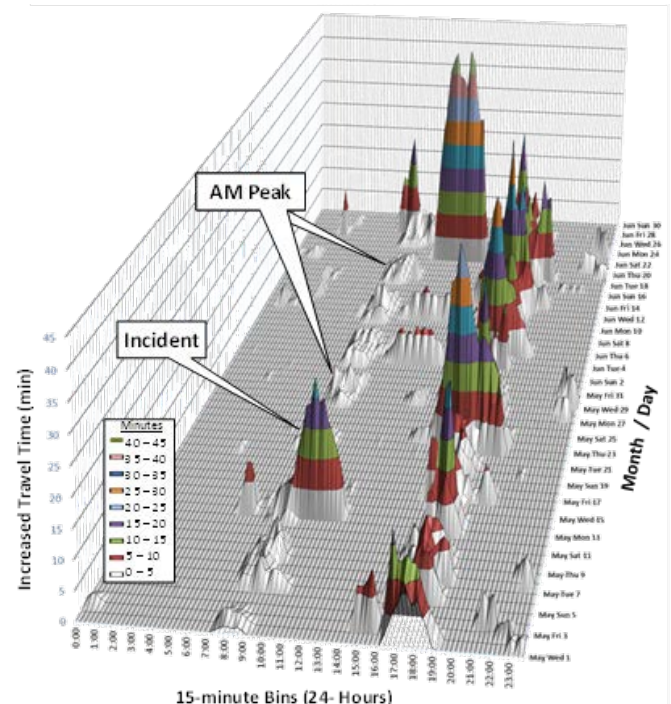
The Institute of Bridge Engineering (IBE) hosted its second annual Advisory Board Meeting on August 20, 2015 on the University at Buffalo (UB) campus. The meeting was organized by Jerome O'Connor, Executive Director of the Institute which is housed in UB's Department of Civil, Structural and Environmental Engineering. Harry Capers, Jr., Arora and Associates, PC who chairs the board was joined by Dan D'Angelo, NYSDOT; Sheila Duwadi, FHWA TFHRC; Mal Kerley, NXL (formerly VDOT); Rick Land, AECOM (formerly Caltrans); Rich Marchione, NYSDOT; and Greg Nault, Canadian National. Others serving on the board but unable to attend are Gregg Frederick, WDOT; Joey Hartman, FHWA HIBS; Maria Lehman, NYSTA; Stephen Maher, TRB; and Darlene Svilokos, Erie County DPW. The agenda focused on various ways to implement the IBE Mission: **to educate the next generation of bridge engineers and to perform problem-focused research that enables the design and construction of reliable, cost-effective and environmentally sustainable bridges.**

## UTRC AWARDED A RESEARCH STUDY, ENTITLED "SECURE AND PRIVATE SENSING FOR DRIVER AUTHENTICATION AND TRANSPORTATION SAFETY" TO NYIT FACULTY

A new UTRC grant was awarded to New York Institute of Technology faculty Drs. Jonathan Voris, N. Sertac Artan, and Wenjia Li in support of their research investigating aspects of vehicular security. Their work, entitled "Secure and Private Sensing for Driver Authentication and Transportation Safety," seeks to find ways in which data collected from vehicular systems can be used to support emerging applications, such as pay-as-you-drive insurance systems, while ensuring road safety and driver privacy. They also seek to explore how organizations can take advantage of data collected from heterogeneous roadside infrastructures. The investigators have begun research into driving simulators and sensing hardware and are planning to begin collecting preliminary data with human subjects in the near future.

## DR. THOMAS M. BRENNAN JR. P.E., AN ASSISTANT PROFESSOR AT THE DEPARTMENT OF CIVIL ENGINEERING, TCNJ. PRESENTATION THIS FALL AT THE ITSWC IN BORDEAUX, FRANCE: CHARACTERIZING DIRECTIONAL CORRIDORS BASED ON PROBE VEHICLE DATA

Dr. Brennan will be traveling to France this fall to present his research that uses driver travel times based on anonymous probe vehicle data to statically characterize interstate highway travel corridors. Currently, probe vehicles speeds are being collected along a series of traffic message channels (TMC)s that make up a travel corridor. The research proposes a graphical methodology that is statically supported to aggregate a series of TMC segments. Through a statistical evaluation of the Percent increases in Mean Travel time (PMTT) for each TMC segment, groups of statistically similar segments are identified. The PMTT exceeding the expected travel time at 70% of measured free flow speed was used to evaluate 166 directional TMC segments along 68 miles of Interstate 80 in New Jersey. A t-stat analysis was conducted to compare each of the TMC segments. An example analysis of 5 Million records AM Peak eastbound direction resulted in 25 statistically similar groups. The increase in travel time for one of the groups (a 12.9 mile section along westbound Interstate 80 in Northern New Jersey) is shown in the figure below. The presentation is scheduled for October 7th the Intelligent Transportation Systems World Congress. This research was funded by the UTRC Region II, and is an expansion on the Transportation Research Record "Performance Measures to Characterize Corridor Travel Time Delay Based on Probe Vehicle Data: TRB Paper#15-0167" which is currently in press.



Isometric layout of 24-hour plots of May/June 2013 Corridor Travel Time Inflation for westbound I-80 mile markers 52.5 – 39.6.

## THE NYU POLYTECHNIC SCHOOL OF ENGINEERING ORGANIZED THE BQE CHARRETTE

The NYU Polytechnic School of Engineering, in May 2015, organized for the New York City of Transportation a Charrette of Experts to review the studies of alternatives completed in 2010 for the replacement of the Brooklyn-Queens Expressway segment in downtown Brooklyn (see Figure 1A and 1B).



Figure 1A: Surface Roadway and Tunnel Alignments (Source: BQE Alternatives Evaluation Technical Memorandum). Figure 1B: Photograph of a section of the Triple Cantilever (Source: BQE Triple Cantilever May 19, 2015)

The objective of the Charrette was to review the status of the 2010 NYSDOT Study Alternatives on a number of criteria including: planning, constructability/implementation feasibility, financing, and traffic impacts; and to elicit ideas/suggestions from the expert panel for implementable solution strategies to replace the aging structure.

The Charrette was attended by all relevant institutional stakeholders, including federal, state, and city transportation officials, the NYC Office of Management and Budget, and Mayor's Office. A Final report, submitted to the NYCDOT on June 18, 2015 identified immediate and strategic steps deemed necessary by the Expert Panel to move the project forward from the standstill alternatives studied in 2010.

Dr. John Falcocchio, and Dr. Ilan Juran were the Charrette's Principal and co-Principal Investigators for the NYU Polytechnic School of Engineering. Members of the Project Team and Expert Panel are listed below.

### Project Team

Person	Title	Affiliation	Relevance to Project
John C. Falcocchio	Professor, Transportation, Dept. of Civil & Urban Engineering	NYU Polytechnic SOE	PI - Charrette Organization
Ilan Juran	Professor, Infrastructure Urban Infrastructure Institute	NYU Polytechnic SOE	Co-PI Charrette Organization
Adam Lubinsky	Managing Principal	WXY Studio	Charrette Org. + Facilitator
K. Bradley (Brad) Penuel	Chief of Staff, Associate Dean for Special Projects	NYU Polytechnic SOE	Charrette Organization
Wilmer P. Cantos	PhD Candidate, Urban Infrastructure Institute	NYU Polytechnic SOE	Charrette Organization

## Expert Panel

Person	Title	Affiliation	Relevance to Project
Bud Griffis	Professor, Construction Management Dept. of Civil & Urban Engineering	NYU Polytechnic SOE	Constructability / Risk Analysis
Kaan Ozbay	Professor, Transportation Dept. of Civil & Urban Engineering	NYU Polytechnic SOE	Traffic Management
Michael Horodniceanu	President, MTA Capital Construction Company	MTA	Tunneling & Constructability
Raimondo Betti	Professor, Structural Engineering	Columbia University	Structures / Bridges
Jerome O'Connor	Executive Director, Institute of Bridge Engineering	University of Buffalo	Bridges
Robert E. Paaswell	Director Emeritus of University Research Center	The City College of New York	Financing

## TRANSPORTATION INFORMATICS TIER I UNIVERSITY TRANSPORTATION CENTER

### HOSTS ANNUAL SYMPOSIUM

### BIG DATA ANALYTICS TRANSFORMING TRANSPORTATION OPERATIONS, MANAGEMENT AND SAFETY

More than 100 transportation and big data professionals from academia, industry and government gathered for the First Annual Symposium on Transportation Informatics, an inaugural event hosted by Transportation Informatics Tier I University Transportation Center (TransInfo) at its lead institution, the University at Buffalo on August 13th and 14th, 2015.

The Symposium underscored the importance of continued innovative research and implementation of big data analytics to address critical transportation needs to transform transportation operations, management and safety. TransInfo Director and University at Buffalo professor, Adel Sadek, PhD summarized the initiative succinctly; "Transportation systems in the U.S. and abroad are stressed, creating environments that can be unsafe,



Dean of the School of Engineering and Applied Sciences at the University at Buffalo, Dr. Liesl Folks



Symposium attendees represented academic, industry and government sectors

unhealthy and expensive. Transportation informatics addresses these problems through research-driven results", he said. Nearly 30 distinguished speakers were featured including keynote addresses from Michael Pack, Director of the University of Maryland CATT Lab; Ram Pendyala, PhD, Frederick R. Dickerson Chair and Professor of Transportation Systems at Georgia Tech; and Barry Einsig, Global Transportation Executive at Cisco. Presentations, workshops and guided discussions covered a broad range of topics including, but not limited to: Developing computer models to predict border crossing delays. Using unmanned aircraft systems to inspect bridges. How connected vehicles can improve transportation systems and Mining social media data to predict traffic.

Shanjiang Zhu, PhD, assistant professor of transportation planning at George Mason University, explained how he is working to improve one of the nation's most traffic-clogged metropolitan areas: Washington, D.C. He is developing computer models that analyze real-time data collected by sensors along major thoroughfares to help the Virginia Department of Transportation best react to traffic accidents and other incidents that cause delays. "We have to develop a system to assist them in developing the best strategies" to control traffic, he said.

#### ON THE WEB

Additional symposium details including video can be found at: <http://www.buffalo.edu/transinfo/2015Symposium.html>

TransInfo, one of only twenty Tier 1 University Transportation Centers in the US is a consortium of four national universities including the University at Buffalo, Rensselaer Polytechnic Institute, George Mason University and the University of Puerto Rico-Mayagüez, as well as CU-BRC, a not-for-profit research corporation located in Buffalo, NY. The event was co-sponsored by Cisco, Seabury Airline Planning Group, U.S Department of Transportation's Office of the Assistant Secretary for Research and Technology (OST-R), University Transportation Research Center Region 2, and the Institute for Sustainable Transportation and Logistics at the University at Buffalo.



### **THE CENTER FOR RESEARCH AND EDUCATION IN ADVANCED TRANSPORTATION ENGINEERING SYSTEMS AT THE SOUTH JERSEY TECHNOLOGY PARK AT ROWAN UNIVERSITY**

The Center for Research and Education in Advanced Transportation Engineering Systems (CREATEs) will be housed at the South Jersey Technology Park at Rowan University. This R&D center will provide resources to conduct cutting-edge research that will drive the regional economy through the creation of permanent full-time jobs, and high-end workforce-development opportunities for undergraduate and graduate students at the Henry M. Rowan College of Engineering as well as professional training and certification program.

CREATEs will enhance the transportation industry through the creation of improved construction materials and pavement technologies, by developing solutions to ease traffic congestion, and will introduce efficiencies to improve construction and infrastructure.

CREATEs, led by Dr. Yusuf Mehta, who is recently promoted to the rank of Professor of civil and environmental engineering, will bring together the resources of the award-winning, accredited, Rowan University Construction Materials Laboratory (RUCOM) with a forthcoming Mark IV Heavy Vehicle Simulator (HVS). By synthesizing these resources, a range of constituencies will be able to benefit from advanced research, including: industry contractors, the U.S. Department of Transportation, individual state departments of transportation, the Federal Aviation Administration, the Department of Defense, and county and municipal governments and agencies.



### **DR. RICARDO A DAZIANO, ASSISTANT PROFESSOR AT CORNELL UNIVERSITY CO-AUTHOR A PAPER WITH HIS STUDENT YUTAKA MOTOAKI “A HYBRID-CHOICE LATENT-CLASS MODEL FOR THE ANALYSIS OF THE EFFECTS OF WEATHER ON CYCLING DEMAND”, PUBLISHED IN MAY IN TRANSPORTATION RESEARCH PART A: POLICY AND PRACTICE, AND BASED UPON WORK SUPPORTED BY UTRC**

(<http://www.sciencedirect.com/science/article/pii/S0965856415000592>)

In this paper, the authors have analyze demand for cycling using a discrete choice model with latent variables and a discrete heterogeneity distribution for the taste parameters. More specifically, the authors have used a hybrid choice model where latent variables not only enter into utility but also inform assignment to latent classes. Using a discrete choice experiment, they analyze the effects of weather (temperature, rain, and snow), cycling time, slope, cycling facilities (bike lanes), and traffic on cycling decisions by members of Cornell University (in an area with cold and snowy winters and hilly topography). They showed that cyclists can be separated into two segments based on a latent factor that summarizes cycling skills and experience. Specifically, cyclists with more skills and experience are less affected by adverse weather conditions. By deriving the median of the ratio of the marginal rate of substitution for the two classes, they showed that rain deters cyclists with lower skills from bicycling 2.5 times more strongly than those with better cycling skills. The median effects also show that snow is almost 4 times more deterrent to the class of less experienced cyclists. They also modeled the effect of external restrictions (accidents, crime, mechanical problems) and physical condition as latent factors affecting cycling choices.

### NYU RUDIN CENTER FOR TRANSPORTATION

#### Citi Bike's First Two Years

Since its launch in May 2013, cyclists have taken more than 13.6 million trips on Citi Bike and bike share has become an integral part of New York's transportation culture. A new report from the NYU Rudin Center for Transportation released this summer analyzed Citi Bike's success and uncovered a shocking statistic: 78 percent of member rides were taken by a man. Read the report online and coverage by the [New York Times](#).

#### Emerging Leaders in Transportation

The new class of the NYU Rudin Center's Emerging Leaders in Transportation program is now under selection. The program will launch in late October with discussions with transportation leaders and field trips to vital management facilities. The Rudin Center received 54 applications from all over the world, and will select 18 participants. Since last year's inaugural class, nine of the 19 participants were awarded promotions or new roles.

The Emerging Leaders in Transportation program is funded by a grant from the University Transportation Research Center.

#### NEW APPOINTMENTS

Professor Rae Zimmerman from New York University has been appointed to the third New York City Panel on Climate Change (NPCC3), see: <http://www1.nyc.gov/office-of-the-mayor/news/461-15/mayor-de-blasio-third-nyc-panel-climate-change—ensuring-best-available-science>

Dr. Yusuf Mehta from Rowan University got promoted to rank of Professor and he is also appointed as the Director of Center for Research and Education in Advanced Transportation Engineering Systems (CREATEs)

#### NEW GRANTS

Professor Zimmerman from NYU is a member of the five year multi-university and multi-city research project, Urban Resilience to Extreme Weather Related Events Sustainability Research Network (UREx SRN), funded by the National Science Foundation and led by Arizona State University.

See: <http://wagner.nyu.edu/news/newsStory/prof-rae-zimmerman-chosen-participate-urban-infrastructure-and-extreme-weather>

Dr. Rae Zimmerman was also awarded with the UTRC/USDOT research funding for the study entitled, "Public Transit and Mandatory Evacuations Prior to Extreme Weather Events in NYC,"

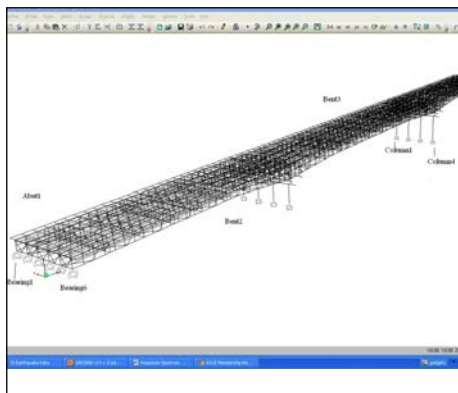
Rowan University received NJDOT grant for the project titled, "HVS Evaluation of Flexible Overlays on Composite Pavement". Dr. Yusuf Mehta will be the Principal Investigator for this project.

## COMPLETED PROJECTS

### VERIFICATION/DEVELOPMENT OF SEISMIC DESIGN SPECIFICATIONS FOR DOWNSTATE ZONE

**PI: Dr. Anil Agrawal & Dr. Huabei Liu**  
**Institution: CCNY/CUNY**  
**Sponsors: NYSDOT & UTRC**

The New York City Department of Transportation (NYCDOT) Seismic Design Guidelines Report was updated in September 2008 by Weidlinger Associates to reflect current state-of-the-art knowledge. The NYCDOT seismic design guidelines are for use in the Downstate Zone which consists of New York City, Rockland County, Westchester County and Nassau County. NYSDOT has adopted the AASHTO LRFD Seismic Design Specifications for the Upstate Zone. The NYCDOT Seismic Design Guidelines Report (September 2008) proposed for use in the Downstate Zone has some key differences with the current AASHTO LRFD Bridge Design Specifications. The main objectives of this project has been to (i) carry out an independent assessment of the proposed New York City Department of Transportation (NYCDOT) Seismic Design Guidelines Report (September 2008) by evaluating the methodology and assumptions used in the development of the report.



#### ON THE WEB

The full report is available for a free download at the UTRC website:

<http://www.utrc2.org/sites/default/files/pubs/Seismic-Design-Specification.pdf>

### CONSISTENCY OF NEW YORK STATE BRIDGE INSPECTION PROGRAM

**PIs: Dr. Anil Agrawal**  
**Institution: CCNY/CUNY**  
**Sponsor(s): NYSDOT & UTRC**

The New York State Department of Transportation (NYSDOT) maintains an inventory of over 17,000 highway bridges across the state. As per New York State's Uniform Code of Bridge Inspections, all bridges in New York State are inspected biennially, or more often as necessary. Bridge inspectors are required to assign a condition rating for up to 47 structural elements of each bridge, including 25 components of each span of a bridge, in addition to the general components common to all bridges based on visual inspection of these elements. The bridge condition rating scale ranges from 7 to 1, 7 being new and 1 being in failed condition. In addition to this, ratings 8 and 9 are assigned to cases "not applicable" and "condition and/or existence unknown". A detailed and quantitative evaluation of consistency of inspection ratings of different bridge elements has been carried out through the analysis of inspection data. Results show that the overall consistency of ratings of different elements is more than 90%.



#### ON THE WEB

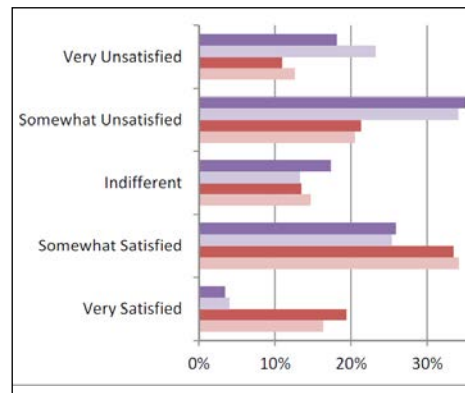
The full report is available for a free download at the UTRC website:

<http://www.utrc2.org/sites/default/files/pubs/Bridge-Inspection-Program.pdf>

### EMPOWERING INDIVIDUALS TO MAKE ENVIRONMENTALLY SUSTAINABLE & HEALTHY TRANSP. CHOICES IN MEGA-CITIES THROUGH A SMARTPHONE APP

**PI: Dr. Yan Zheng, Dr. Alfredo Morabia, Dr. Hongmian Gong**  
**Institution: CUNY**  
**Sponsor: UTRC**

A paradox of industrialized society is the overreliance on unsustainable fossil fuel energy for transportation and insufficient use of sustainable bodily energy for more physically active modes of transport. Different modes of transportation require varying levels of physical activity, with cars being the most sedentary, followed by public transportation, and active transportation (walking and biking). Preference (individual and societal) for sedentary travel modes such as car driving over available physically active travel modes has contributed to air pollution and the epidemic of obesity. Low-carbon transport systems have the potential to improve the health of citizens and to mitigate climate change simultaneously. Among the potential solutions for low-carbon transport systems, innovations in technology and demand reduction have received much attention, with less consideration toward behavioral options that are also critical to a decarbonized transport sector.



#### ON THE WEB

The full report is available for a free download at the UTRC website:

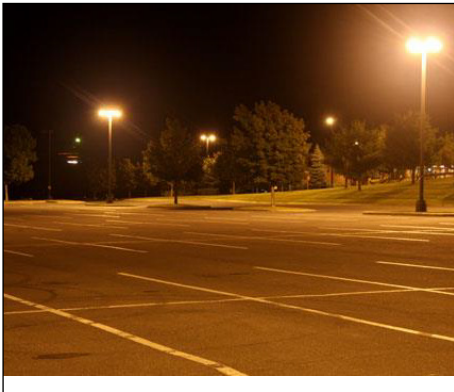
<http://www.utrc2.org/sites/default/files/pubs/Smart-Transportation-Choices-Mega-Cities-Smartphone-App.pdf>



## ANALYSIS OF ENERGY EFFICIENT HIGHWAY LIGHTING RETROFITS

**PI: Dr. Mark Rea, Dr. John Bullough**  
**Institution: RPI**  
**Sponsors: NYSDOT & UTRC**

Solid state lighting technology is advancing rapidly to a point where light emitting diode (LED) lighting systems can be viable replacements for existing lighting systems using high pressure sodium (HPS). The present report summarizes analyses conducted to document existing lighting conditions along a parkway (Southern State Parkway, Long Island) and an arterial roadway (Central Avenue, Albany County).



### ON THE WEB

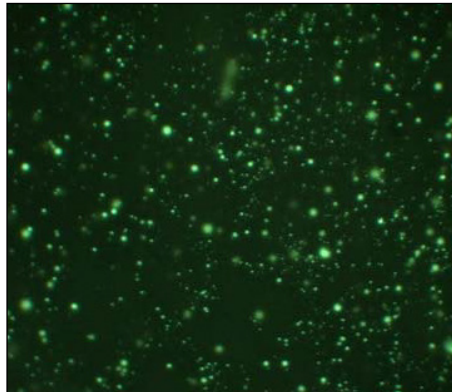
The full report is available for a free download at the UTRC website:

<http://www.utrc2.org/sites/default/files/Final-Energy-Efficient-Highway-Lighting-Retrofits.pdf>

## IMPACT OF POLYMER MODIFICATION ON MECHANICAL AND VISCOELASTIC PROPERTIES

**PIs: Dr. Yusuf A. Mehta**  
**Institution: Rowan University**  
**Sponsor(s): UTRC**

This study was initiated with the aim of evaluating the relative impact of different cross-linking agents on the rheological and morphological properties of polymer modified asphalt binders (PMAs). To complete this objective, two cross-linking agents (an aromatic oil and silicon oxide) were selected for evaluations. The cross-linking agents were then added to a styrene-butadiene-styrene (SBS) polymer modified binder (virgin PG 70-22) at different dosages. The selected cross-linking dosages were 2 and 4% by weight of virgin binder.



### ON THE WEB

The full report is available for a free download at the UTRC website:

<http://www.utrc2.org/sites/default/files/pubs/Polymer-Modification-Viscoelastic-Properties.pdf>

## DESIGNING, DEVELOPING, AND IMPLEMENTING A LIVING SNOW FENCE PROGRAM FOR NEW YORK STATE

**PI: Dr. Timothy A. Volk**  
**Institution: SUNY**  
**Sponsor: NYSDOT & UTRC**

Living snow fences (LSF) are a form of passive snow control designed to mitigate blowing and drifting snow problems on roadways. Blowing and drifting snow can increase the cost of highway maintenance and create hazardous driving conditions when snow is lifted off the ground by wind and transported toward a road. LSF disrupt wind patterns, causing blowing snow to be deposited in designated areas around the fence and away from the road.



### ON THE WEB

The full report is available for a free download at the UTRC website:

[http://www.utrc2.org/sites/default/files/FinalReport-Living-Snow-Fence-Program-NYS\\_0.pdf](http://www.utrc2.org/sites/default/files/FinalReport-Living-Snow-Fence-Program-NYS_0.pdf)

## Using Mobile Computers to Automate the Change Order Decision Making Process and Improve Total Time and Cost Predictions on Highway Construction Projects

**PI: Dr. Didier Valdes, Dr. José L. Perdomo**  
**Institution: University of Puerto Rico, at Mayaguez**  
**Sponsors: NYSDOT & UTRC**

Highway construction projects are characterized by the large amount of data that needs to be collected, processed, and exchanged among the different project participants. Collection of construction inspection data, in particular, allows field personnel to monitor project performance with the ultimate goal of improving productivity and lowering costs. The accomplishment of these two goals could lead to better construction project management and performance that could in turn reduce the time required for project delivery.

Current practices for recording and filing field inspection data are mainly paper-based. The manual process using paper forms is a time consuming and tedious task. Not only is the clerical expense of this process very high, but also the organization and review of the information commands an inordinate amount of time by a project manager, of which most managers possess very little.



### ON THE WEB

The full report is available for a free download at the UTRC website:

<http://www.utrc2.org/sites/default/files/pubs/Automate-Inspection-Highway-Construction-Projects.pdf>

# NEW STAFF AT UTRC

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## **Bahman Moghimi**

Ph.D. Student in Transportation Program at CCNY  
Research Assistant, UTRC

In Fall 2015, UTRC welcomed a new Ph.D. student in the CCNY Transportation program and a research assistant at UTRC; **Bahman Moghimi**. Mr. Moghimi was a first-ranked graduate student at the Iran University of Science and Technology. He also received his master's degree in Transportation Engineering from the Northeastern University in Boston. He was awarded the Dean's Fellowship for the year 2013-2014. Prior to joining UTRC/CCNY, he was working as a Research Assistant at the Northeastern University for 2 years on the project; **Self-Organizing Traffic Control and Signal Priority for Transit**. His research interests include traffic signal control with an emphasis on actuated control and transit signal priority. At UTRC, he plans to continue working on the transportation projects and use his computer programming skills in various traffic simulation software.

## ANNOUNCEMENTS

### NYSDOT RFP,C-15-07, Phase 2 Biological Control of Invasive Phragmites Australis

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The New York State Department of Transportation has issued an RFP for Project C-15-07, Phase 2 Biological Control of Invasive Phragmites australis. Proposals can be submitted through the UTRC submission system and are due November 17, 2015. The RFP is available at the following link: [NYSDOT C-15-07](#).

If interested in applying, please register for the UTRC submission system if you have not already done so at Register. To apply, please visit: <http://utrc2.org/welcome-utrc-ii-submission-system>

### Metro North's Associate Engineer Program

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Metro North Railroad has posted their Associate Engineer Program on the [www.mta.info](http://www.mta.info) website.

To view the job description for this career opportunity, please click [here](#).

MTA Metro-North Railroad is a dynamic organization, operating out of the jewel of New York City, Grand Central Terminal. They provide service to over 82 million customers annually, traveling in and out of New York and Connecticut. A subsidiary of the Metropolitan Transportation Authority, Metro-North Railroad is the busiest commuter railroad in the nation. MTA Metro-North Railroad strives to provide a safe commute, great service to its customers and rewarding opportunities to its employees.

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Senior Research Fellow

**Dan Wan**

Ph.D. Candidate

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- ▶ City University of New York
- ▶ Clarkson University
- ▶ Columbia University
- ▶ Cornell University
- ▶ Hofstra University
- ▶ Manhattan College
- ▶ New Jersey Institute of Technology
- ▶ New York Institute of Technology
- ▶ New York University
- ▶ Rensselaer Polytechnic Institute
- ▶ Rochester Institute of Technology
- ▶ Rowan University
- ▶ Rutgers University\*
- ▶ State University of New York
- ▶ Stevens Institute of Technology
- ▶ Syracuse University
- ▶ The College of New Jersey
- ▶ University of Puerto Rico Mayagüez



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UTRC Research News is Published Quarterly by the University Transportation Research Center, which is based at  
The City College of New York,  
Marshak Hall, Suite 910  
New York, NY 10031.

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