

# UNIVERSITY TRANSPORTATION RESEARCH CENTER • REGION 2



**ANNUAL  
REPORT** 2014

Annual Report – 2014

**UNIVERSITY TRANSPORTATION RESEARCH CENTER - REGION 2 | THE CITY COLLEGE OF NEW YORK**



This report represents the activity of the UTRC from January 1, 2014 – December 31, 2014.

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# DIRECTOR'S MESSAGE



**CAMILLE KAMGA**

**Director  
Assistant Professor, Civil Engineering  
The City College of New York, CUNY**

Once again it is the time of year when we present our Annual Report to highlight the Center's activities conducted during the year, while reflecting on what the future holds for our organization.

We began 2014 by receiving new USDOT funding as a result of our successful application to remain a regional University Transportation Center (UTC) under the Moving Ahead for Progress in the 21st Century (MAP) Act. This funding was available as a result of UTRC's participation in the 2013 competition held by the Research and Innovative Technology Administration (RITA) of the U.S. Department of Transportation under which 35 UTCs were selected nationwide. It is of no doubt that working together as a team; we surmounted the challenges and positioned ourselves in a better position to achieve this success. Again and again, I want to thank each and everyone of you for your support of our consortium.

We faced challenges in implementing some of our programs this year due to delays resulting from the restructuring of the administration of our contracts with members of the consortium. We have started to implement a Requirements Agreement, which is a multi-year, multi-sponsor agreement that sets forth the legal obligations of the consortium mem-

bers of the UTRC for the performance of funded programs. We are hopeful that the newly implemented contractual mechanism will be less labor intensive and will lead to a faster execution of our agreements and the availability of fund to new awards.

Looking through the pages of this report, you will agree with me that 2014 has been a very productive year for the Center, owing to a number of significant events that took place. In 2014, we hosted and co-hosted many events including seminars, workshops, symposiums, summits, and conferences. The principal themes of our events focused on the future of transportation as we have hosted presentations on the future rail investments planned for the Northeast Corridor, a symposium on connected and autonomous vehicles, and a Transport-Tech Summit on technologies and the use of big data.

This Summit brought together leading experts, academics, practitioners, industry stakeholders and advocates to discuss the rapidly changing and expanding world of transportation technology innovative solutions.

Continuing on this theme in 2015, UTRC will work with our partners at SUNY Poly, NYSDOT, NYU, SUNY Buffalo, and RPI to lead the establish-

ment of a SMART consortium which seeks to establish a framework for collaboration of industry, government and academia by using Connected and Autonomous Vehicles as a pathway to systematically address the broad array of technology, market and business challenges that hinder the deployment of solutions in Smart Cities or the Internet of Things.

With funding from USDOT and our local transportation agency-partners, we initiated a substantial amount of new research projects, continued investigation on more than 35 research projects, and successfully completed and disseminated final reports of completed research projects. We also proudly awarded scholarships to 10 students by providing financial support towards their education and professional development. These are only some of the achievements we attained during the year 2014 but there are many others, too numerous to mention in these few words.

In light of the expiration of the Moving Ahead for Progress in the 21st Century (MAP) Act which has authorized UTC funding for each of the fiscal years 2013 and 2014, we are optimistically looking forward to steady federal funding so that we may continue to develop and deliver innovative solutions to meet 21st century transportation needs.

## CHAIRMAN'S MESSAGE

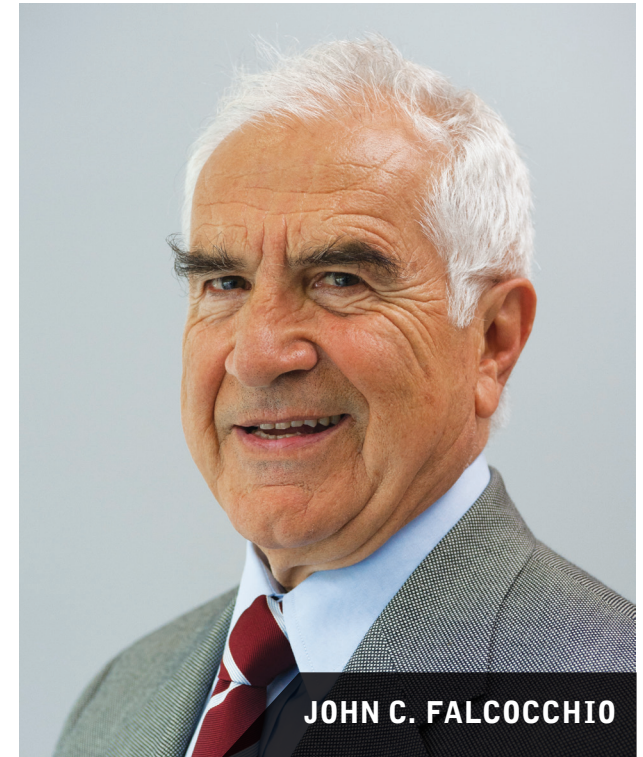
I am grateful to our UTRC staff for this comprehensive Annual Report on the year's accomplishments in education, research, scholarship, and technology transfer by students and faculty from our eighteen UTRC consortium institutions. 2014 has been a year of significant achievements.

We continued to serve our region and the nation through technology transfer activities including participation and organization of symposia, workshops, and seminars in ITS, connected mobility, autonomous vehicles, future rail investments for the Northeast Corridor, and the use of Big Data to provide solutions for sustainable mobility.

UTRC consortium students and research faculty delivered 140 presentations and presided over 23 sessions at the 2015 Transportation Research Board 94th Annual Meeting.

Our partnership with industry and public agencies continues to grow through research projects including freight mobility, pedestrian and cyclist safety, ITS technology deployment, and the development of GPS data storage and access platform to analyze bus operating performance.

These accomplishments advance our understanding of the many factors that impact multimodal transportation performance and its effect on the levels of service and quality of life experienced by our region's travelers, freight movers, shippers and receivers.



**JOHN C. FALCOCCHIO**

**Chairman**  
**Professor, Transportation Planning and Engineering**  
**NYU Polytechnic School of Engineering**

## DIRECTOR EMERITUS'S MESSAGE



**Robert E. Paaswell, PhD, D.M., ASCE**

**Director Emeritus  
Distinguished Professor of Civil Engineering  
The City College of New York, CUNY**

2014 had specific significance for me. It was in September, 1964 – 50 years ago – that I began my academic career as an Assistant Professor of Civil Engineering at SUNY/Buffalo. It is interesting to reflect on the changes in our transportation systems since then. Originally working in geotechnical engineering, I was concerned with compaction, layered system theory, erosion and consolidation issues – all relevant for the emerging program of designing and building a world class highway system. But soon I became immersed in transportation systems planning, design, economics and operations. By the early 1980s, my colleagues and I were training State and Local DOTs on the use of microcomputers for planning, design and traffic engineering. And by 1990, the digital age came into its own, stimulating ITS and new approaches to thinking about delivering operational services. My work on the TCRP oversight committee included the “New Paradigms” project – the modernization of our transit systems. We were concerned about institutional inertia, workforce development and succession planning – and, of course, financing transit.

And now in 2014, these latter issues still remain with us as we enter a phase of transportation not thought about at the end of the last Century – transportation as information. As I have talked about (almost incessantly) with so many of you before, with ubiquitous sensors, GPS tracking and brilliant programming, users of transportation systems can have the same information – at the same time – as transportation system operators. And this makes choosing how to travel unique to each user. The recent surge in Apps driven ride sharing (Uber, Gett, Via – for example) compete in NYC, not only with the taxis and the rest of the for-hire vehicle industry, but with public transit. The question for UTRC and other researchers is “how will transit respond?” Transit – having made it into the 21st C must again consider how it will serve its public and examine the organizational and service delivery models that have defined it for the past several decades. I wish that I was starting all over again – interesting times ahead.

# CENTER'S THEME

## Planning and Managing a Regional Transportation System in a Changing World

UTRC's primary focus is the stewardship, management, and future evolution of its already mature transportation systems, in the face of emerging policy challenges. The region's transportation agencies must continually adjust to the nature of the economy and its evolving transportation requirements; their emerging understanding of what is required to protect public safety and security; and new challenges, such as global climate change. As advances in technology continually redraw the boundaries of what is possible, transportation agencies also face the daunting challenge of revisiting how they define their missions, serve the public and conduct their routine business. Because this region has historically faced so many transportation challenges, it has a tradition of innovation in transportation. Yet as the early solutions it adopts become institutionalized, it tends to be slow to absorb and implement lessons from innovators elsewhere in the U.S. and abroad, and thus often falls behind the curve. To become a region that can plan and manage its systems effectively in the face of change, it must become more dynamic in its approaches to the management of information and technology.

### PLANNING TODAY

Planning today in Region 2 requires knowledge of multi-modal and intermodal systems serving both freight and passenger movements. Planning in the region involves not only MPOs, but all of the many agencies taxed with the need to move people and goods 24/7. Planning is constrained by institutional mandate and history, the need to catch up with a backlog of capital needs, and a chronic shortage of adequate funds for both maintaining and building the infrastructure. UTRC's role is to provide through academic programs, a solid base on which planning decisions can be made; yet UTRC has the capability to provide "instantaneous programs" in response to critical needs (such as the conference organized for New York State on public-private partnerships).

### MANAGING TODAY

Managing today in Region 2 means knowledge of interaction among complex multi modal systems, budgeting, system operations and performance targets, customer needs, the need to address security, and – when fighting fires stops – a sense of vision of system performance and regional change. Management takes place at every level: from Board Chairpersons to line operators. UTRC has initiated and will develop programs ranging from Authority Board Member Training, to training in high technology for Transit workers. UTRC will develop a major training program for the New York City MPO addressing technical issues and management. UTRC is also part of the national group of UTCs that have developed online leadership courses.

### RESPONSES TO CHANGE

As the world changes, the demands on the transportation system change as well. Tomorrow's transportation systems will need to be more secure, more resilient to natural hazards, less damaging to the environment, and better able to use available capacity efficiently. Emerging transportation systems rely on real time technology and rapid transfer of operational information. UTRC partners with leaders in innovation and deployment, including research labs and private firms. UTRC, through its continuing national leadership on new paradigms in transportation management, continues to integrate technology into transportation systems. This is also an era of meeting financial needs through new – and proven – fiscal approaches, many of which include Public-Private Partnerships. UTRC's strong economic capability has made national (and international) impacts and is used to assist regional agencies to address investment impacts. The institutions that have traditionally operated the regional assets must, themselves, begin to change. They must think multi-modally, with integrated operating systems. UTRC, with its strategic capability, can assist the regional agencies (and be a model for national success) in organizational change responsive to new missions.

# HIGHLIGHTS

## UNIVERSITY TRANSPORTATION RESEARCH CENTER RECEIVES \$1.5 MILLION FOR ITS-BASED RESEARCH

The University Transportation Research Center, Region 2, a USDOT-supported university transportation center hosted by the City College of New York, CUNY, and comprised of a consortium of 19 institutions in New York, New Jersey, Puerto Rico, and the Virgin Islands, is pleased to announce that the Center has been awarded \$1,500,000 to conduct studies on behalf of NYSDOT and NYCDOT for the Coordinated Intelligent Transportation Systems Deployment in New York City Program (CIDNY). CIDNY is a multi-year program pertaining to urban Intelligent Transportation Systems (ITS) deployment with the purpose of providing ongoing training courses and conducting research and development programs in the areas of construction management, traffic demand management, dynamic data collection, traffic incident management, traffic signal timing and detection technologies, strategic ITS deployment planning, pedestrians and cyclists safety, data storage and access platform for MTA Bus Time data, and transportation modeling. Five projects are to be funded during Phase 1 of the program for approximately \$500,000, with a possibility of additional projects being funded in future years. FHWA is sponsoring this project with the local share provided by NYC Department of Transportation and NYS Department of Transportation.

For the first phase of the program, a committee comprised of NYSDOT and NYCDOT representatives selected the following five projects:

- The development of the construction management tool will be performed on behalf of NYSDOT. The project will aim to enhance coordination of planning and operations of construction within NYSDOT divisions and other agencies to optimize traffic flows within the travel corridors and networks impacted by one or more construction projects. In addition, improved coordination will enhance the safety of travelers and workers during periods of construction as a critical element of the NYSDOT “Driver’s First” program. This task will evaluate the effectiveness of an enhanced Construction Impact Analysis (CIA) tool designed and developed by the Washington State Department

of Transportation (WSDOT) primarily in the Puget Sound Metropolitan area. The CIA will be evaluated by UTRC with the University of Washington Transportation Research Center (TRAC) to determine those elements of CIA, which can be deployed in a test demo in NYC.

- The development of a comprehensive guide to traffic signal timing project will be performed on behalf of NYCDOT. The study will focus on traffic signal control principles, practices and procedures. The final deliverable should be a synthesis of traffic signal timing concepts and their application, and vehicle detection technologies.

Project	PI(s)	Affiliation
Develop a Multi-Agency/Multi-Modal Construction Management Tool to Enhance Coordination of Construction Projects City-Wide During Planning and Operation Phases to Improve Highway Mobility and Driver’s Experience	Dr. Kaan Ozbay Dr. John Falcochio Dr. Camille Kamga	NYU CUNY
Develop a Comprehensive Guide to Traffic Signal Timing, New Detection Technologies and Advanced Signal Timing Concepts Applicable in New York City	Dr. Elena Prassas Dr. Qing He	NYU University at Buffalo/ SUNY
Strategic Intelligent Transportation Systems (ITS) Deployment Plan for New York City	Dr. Camille Kamga Dr. Anil Yazici	CUNY Stony Brook/SUNY
Research on Pedestrians and Cyclists Safety using ITS Technology in New York City	Dr. Elena Prassas	NYU
Develop Data Storage and Access Platform for MTA Bus Time Data	Dr. Claudio Silva Dr. Kaan Ozbay	NYU

- Also being performed on behalf of NYCDOT, the Strategic Intelligent Transportation Systems project will assist the City to place all pieces of ITS together to improve operational efficiency. This Task will review and update the current Strategic Intelligent Transportation Systems (ITS) Deployment Plan for New York City.

- The study on pedestrian and cyclist safety will involve research for NYCDOT on ITS-based countermeasures for reducing pedestrian injuries, conflicts and fatalities in the City, including but not limited to traffic signs, pavement markings, signals and signal timing, physical separations, and street lighting.

- NYCDOT plans to use GPS data from GPS location devices equipped on public buses to monitor bus performance and support the Agency’s strategic goals. The data storage and access platform project using MTA Bus Time data will result in a database for storing the GPS data and a user interface for accessing the data for performing basic analysis.



## VOLVO RESEARCH AND EDUCATIONAL FOUNDATIONS (VREF) METROFREIGHT TEAM VISIT AT UTRC



**MetroFreight (MF) is a consortium led by the METRANS Transportation Center and housed at the University of Southern California.**

The consortium members include:

METRANS Transportation Center, a two university multidisciplinary transportation research center comprised of USC and California State University, Long Beach;

University Transportation Research Center (URTC), a consortium of 18 universities in the New York Region, housed at City College of New York (CCNY);

French Institute of Science and Technology for Transport, Development and Networks (IFFSTAR) at University of Paris-Est, in Paris;

Korea Transport Institute (KOTI) in Seoul.

- See more at: <http://www.metrotrans.org/metrofreight>

UTRC hosted the Volvo Research and Educational Foundations (VREF) MetroFreight team on October 27, 2014 at the City College of New York to discuss the team's current and future work as a Volvo Center of Excellence in urban freight and logistics. Members attended from all four locations comprising the MetroFreight team— The lead partner, University of Southern California (USC)/California State University Long Beach (CSULB); IFSTTAR- French Institute of Science and Technology for Transport, Development and Networks University, Paris; The Korea Transport Institute (KOTI), Seoul; and UTRC with participants from CCNY, Hofstra University, Columbia University, and SUNY Buffalo. The team is progressing with the second year of a five year program to research ways to improve the transportation, storage and handling of goods in city centers using Los Angeles/Long Beach, Paris, Seoul, and New York as the test locations.

The team members had also convened in New York City to attend and participate in a workshop sponsored by VREF on October 28-30, 2014 in conjunction with the Ford Foundation, Rockefeller Foundation, Transit-Center, the American Assembly, the Regional Plan Association, the Institute for Transportation and Development and the Center for Sustainable Urban Development (CSUD) at Columbia University on Transforming access, mobility and delivery in cities. Working with CSUD, the MetroFreight team organized a panel session titled Why bother about urban freight? MetroFreight partner Laetitia Dablanc, Director of Research from IFSTTAR, led the panel as moderator, and UTRC researcher Alison Conway, Ph.D, from CCNY's Department of Civil Engineering served as a discussant alongside Michael Browne of the University of Westminster. Participating panelists included many New York City freight experts - Joe Dack (HDR), Andrew Genn (NYC

EDC), Stacey Hodge (NYC DOT), and Howard Mann (NYMTC), as well as Nomesh Bolia (IIT Delhi). The panel covered a broad range of urban freight-related issues, including the broad impacts of freight as a facilitator of economic development and generator of social costs; new trends in freight demand such as e-commerce and just-in-time deliveries; and public policies, urban design, and stakeholder communications for improved freight planning and operations.

During the event, MetroFreight team members participated in other panels as well. David King, Ph.D, from Columbia University's Department of Architecture, Planning, and Preservation was one of the discussants during the panel on How do we best design, and implement access, including affordable and safe public transit? Genevieve Giuliano, Director of METRANS Transportation Center and professor at USC's Price School of

Public Policy was a speaker during the panel session, What are the challenges and opportunities for reforming the governance institutions of urban transport and land-use?

MetroFreight Team members from UTRC include:

- Alison Conway, Ph.D., CCNY;
- Penny Eickemeyer, UTRC;
- Camille Kamga, Ph.D., Director of UTRC;
- David King, Ph.D., Columbia University;
- Ben Miller, UTRC;
- Robert (Buz) Paaswell, Ph.D., CCNY;
- Jean-Paul Rodrigue, Ph.D., Hofstra University;
- Elliot Sclar, Ph.D, Columbia University and;
- Qian Wang, Ph.D., SUNY Buffalo.

## THE THIRD CONNECTED AND AUTONOMOUS VEHICLE SYMPOSIUM: SMART CITY MARKET ALIGNMENT FOR ROADWAY TECHNOLOGIES (SMART)

The UTRC's third annual Connected and Autonomous Vehicle Conference took place at the SUNY Polytechnic Institute on November 5th, 2014. The conference was a big success as the event received support from state and local government. The New York State Department of Transportation Commissioner, Joan McDonald; Congressman Paul Tonko; and Senior Vice President for Cisco's Technology Group, Helder Antunes delivered keynote addresses at the conference. The conference outlined two plenary sessions; National Connected Vehicle Landscape led by Richard McDonough from NYSDOT and Transitioning Innovation to Commercialization led by Michael Fancher from SUNY Polytechnic Institute. There were four information-rich panels (listed below) featuring presentations from experts in public and private sector.

Photo by Melissa Preston Renzi/SUNY Polytechnic Institute



Joan McDonald, NYSDOT Commissioner

Photo by Melissa Preston Renzi/SUNY Polytechnic Institute



Helder Antunes, CISCO

- 1 - University-based Research Assets
- 2 - Industry-driven Tech Roadmap
- 3 - Government-directed Framework
- 4 - Investment Strategies to Enable Success

The keynote addresses and speakers' presentations are available on the conference website. [www.connectedvehicleworkshop.com](http://www.connectedvehicleworkshop.com)



Congressman Paul Tonko, NY-20th District



Matthew Peter, Chief of Staff to the Mayor Albany, New York



Alain Kornhauser  
Princeton University



Xuegang (Jeff) Ban  
Rensselaer Polytechnic Institute



Kaan Ozbay  
New York University



Joah Sapphire, Global Dynamic Group, LLC



Michael Fancher, SUNY Poly



Kishore Bagul, Information Technology Services, NYS



Mandeep Singh, Bloomberg Intelligence



Thomas Hudson, Municipal Parking Services



Adam Spence, START-UP, Empire State Development

## THE FORMATION OF THE SMART CONSORTIUM FOR THE CONNECTED/AUTONOMOUS VEHICLES DEPLOYMENT IN NEW YORK



Following the success of the third Annual Connect and Autonomous Vehicle symposium, SUNY Polytechnic Institute and the University Transportation Research Center (UTRC) for Region 2 (New York, New Jersey and Puerto Rico) organized a meeting on November 6th, 2014 to establish the SMART Consortium with representatives from industry, government and academia to participate in the definition of its Vision, Mission, Goals and Objectives. Peiwei Wang, Ph. D. of Noblis and Kate Hartman of USDOT presented at the workshop to provide more detail on the 2015 USDOT solicitations.

“The SMART Consortium seeks to establish the framework for collaboration by using Connected and Autonomous Vehicles as a pathway to align industry, government and academia to systematically address the broad array of technology, market and business challenges that hinder the deployment of solutions in Smart Cities or the Internet of Things (IoT) which is estimated to be over a \$2 trillion market (in 2014).”

To accomplish this, SUNY Poly and UTRC seek to build upon and establish new partnerships with: key government agencies (including NYSDOT, NYCDOT, MTA, DMV, NYSERDA, NYS Broadband, ESDC and NYS CTO, among others); top academic institutions (including SUNY Poly, NYU-CUSP and University at Buffalo, RPI, University at Albany, CUNY, and Columbia, among others); and, industry leaders (including Cisco, IBM, Intel, GE, Siemens, Analog Devices, Kapsch, Perkin Elmer, Southwest Research Institute and Parsons Brinkerhoff, among others) to define and drive the proposed SMART Consortia. Once defined, the SMART consortia members would be asked to provide guidance on the development of an integrated

technology roadmap, expanding commercialization pathways and dynamic economic outreach strategies.

More details will be posted on the website about the progress of the SMART Consortium.  
[www.connectedvehicleworkshop.com/consortium](http://www.connectedvehicleworkshop.com/consortium)

## GROUND TRANSPORTATION TECHNOLOGY SYMPOSIUM: BIG DATA AND INNOVATIVE SOLUTIONS FOR SAFE, EFFICIENT AND SUSTAINABLE MOBILITY

Following the success of the 2013 GPS Symposium, UTRC hosted another successful conference on Ground Transportation Technology addressing Big Data and Innovative Solutions for Safe, Efficient and Sustainable Mobility on November 19th, 2014 at the New York Institute of Technology. UTRC's distinguished lecturer Matthew W. Daus was the chair of the organizing committee.

Hon. Council Member Ydanis Rodriguez, Chair of the New York City Council's Transportation Committee delivered the introductory remarks and talked about his transportation progressive agenda.

To view the video of this speech, please see the following link:

<http://vimeo.com/114064775>.

The afternoon keynote speaker was Dr. Amen Ra Mashariki, the newly appointed Chief Analytics Officer who leads the Mayor's Office of Data Analytics (MODA). Dr. Mashariki spoke about MODA's role and plans to address the open data issues in the city. To view the Keynote Speech, click here <http://vimeo.com/114130662>.

For media coverage of the keynote speech, please visit:

<http://www.capitalnewyork.com/article/city-hall/2014/11/8557154/transit-event-new-city-analytics-head-stresses-sharing>

There were eight sessions throughout the summit, moderated by highly skilled transportation professionals and featured presentations from impeccable speakers throughout the public and private sector, conducting transportation related research addressing data issues. This unique summit brought together leading experts, academics, practitioners, industry stakeholders and

advocates to discuss the rapidly changing and expanding world of transportation technology innovative solutions.

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

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

The symposium proceedings including presentations, videos, and images are available on the UTRC's website at: <http://utrc2.org/events/ground-transportation-technology-symposium>.

A detailed column summarizing the symposium speeches authored by Mr. Daus can be accessed at the utrc website at:

<http://www.utrc2.org/events/ground-transportation-technology-symposium>



From L to R: Amen Ra Mashariki, NYC Chief Analytics Officer, NYC Mayor's Office; Camille Kamga, UTRC Director; Matthew W. Daus, UTRC Distinguished Lecturer; Robert E. Paaswell, UTRC Director Emeritus; Mahdiah Allahviranloo, Assistant Professor, CCNY; Nicholas O'Brian, NYC Mayor's Office



From L to R: Dr. Nada Marie Anid, Dean of School of Engineering and Computing Sciences, NYIT; Honorable Ydanis Rodriguez, NYC Council Member, Chair, Transportation Committee; Dr. Camille Kamga, UTRC Director



Session 7 Speakers - From L to R: Reuben Juster, Faculty Research Assistant, CATT, University of Maryland; Felisa Vazquez-Abad, Professor, Hunter College, CUNY; Mahdiah Allahviranloo, Assistant Professor (Moderator), CCNY; Michalis Xyntarakis, Senior Associate, Cambridge Systematics



Session 3 Speakers: From L to R: David King, Assistant Professor, Columbia University; Kenneth Esirim, Doctoral Student, Graduate Center, CUNY; Matthew W. Daus, UTRC Distinguished Lecturer; Anil Yazici, Assistant Professor, Stony Brook University, SUNY

## 2014 ITS-NY TWENTY-FIRST ANNUAL MEETING:

ITS: PROGRESS AND  
NEW OPPORTUNITIES



Dr. Camille Kamga with NYSDOT Commissioner, Joan McDonald, at the ITS-NY Annual Meeting

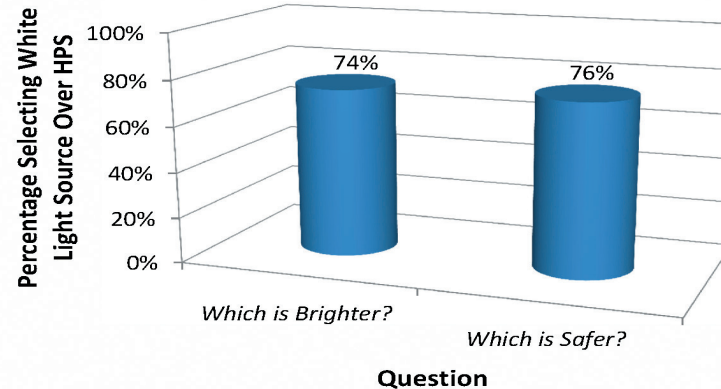
The Intelligent Transportation Society of New York (ITS-NY) held another successful annual meeting on June 12-13, 2014 at Saratoga Springs, NY. Dr. Camille Kamga was the co-chair of this 21st ITS-NY Annual Meeting which was very well attended by transportation experts throughout the NY region. The New York State Department of Transportation's Commissioner, Joan McDonald was the keynote speaker.

Dr. Kamga also moderated the panel on Autonomous and Connected Vehicles. The panel speakers included; Richard McDonough, New York State DOT; Dr. Alain Kornhauser, Princeton University; Tom Maguire, New York City DOT; Raymundo Martinez, TransCore; Mike Pina, U.S. DOT; and Jeffrey Spencer, U.S. DOT/Federal Transit Administration.

To access the panel presentations, please visit the ITS-NY website at: [www.its-ny.org/library.php](http://www.its-ny.org/library.php)

## UTRC'S RESEARCH PROJECT, "LEVERAGING BRIGHTNESS FROM TRANSPORTATION LIGHTING SYSTEMS THROUGH LIGHT SOURCE COLOR" WAS FEATURED ON UTC'S SPOTLIGHT NEWSLETTER

Principal Investigator: Dr. John D. Bullough, Senior Research Scientist at the Lighting Research Center (LRC), Rensselaer Polytechnic Institute



In a different experiment, most observers judged a street scene as brighter, safer, and more secure, under a white light source than under HPS, for the same measured light level.

The USDOT's Research and Innovative Technology Administration (RITA) featured UTRC Research on the July 2014 UTC Spotlight Newsletter edition. RITA's UTC spotlight newsletter highlights accomplishments and projects from one UTC every month. The research project entitled; "Leveraging Brightness from Transportation Lighting Systems through Light Source Color: Implications for Energy Use and Safety for Traffic and Pedestrians" was conducted by Dr. John Bullough who is a senior research scientist at the Lighting Research Center (LRC) at the Rensselaer Polytechnic Institute.

As part of its study for the Region 2 University Transportation Research Center (UTRC) at the City University of New York, the Lighting Research Center (LRC) at Rensselaer Polytechnic Institute conducted human factors studies to investigate responses to light sources having different spectral (color) compositions and to develop a model to

predict perceptions of brightness and, therefore, of safety and security under roadway lighting conditions.

The model includes inputs from recently discovered visual mechanisms that also influence the eye's pupil size and circadian responses to light, tying these scientific discoveries to practical lighting engineering recommendations. The model can be used to support the definition of benefit metrics for the specification of roadway lighting that would allow lighting engineers to better address the visual needs of pedestrians at night by taking into account both the spectrum of the light source and the measured light level to be used.

Read the full article at RITA's website: [www.rita.dot.gov/utc/sites/rita.dot.gov/utc/files/utc\\_spotlights/pdf/spotlight\\_0714.pdf](http://www.rita.dot.gov/utc/sites/rita.dot.gov/utc/files/utc_spotlights/pdf/spotlight_0714.pdf)

## DR. NEVILLE A. PARKER PRESENTED THE “PARKER AWARD” FOR OUTSTANDING NON-THESIS MASTERS DEGREE PAPER IN POLICY AND PLANNING AT CUTC BANQUET



From L to R: Dr. Neville A. Parker, CCNY; Mr. Martin Barna, MTI; and Dr. Peter Haas, Mineta Institute of Transportation at SJSU

We proudly acknowledge Dr. Neville A. Parker for his association with UTRC and his long term contribution to Transportation.

Dr. Neville Parker attended the 93rd TRB meeting and 2014 CUTC Banquet award to present the prestigious award named after him, “Parker Award for Outstanding Non-thesis Masters Degree Paper in Policy and Planning”. The award was given to Mr. Martin Barna of Mineta Transportation Institute-San Jose State University for his paper titled, “Evaluation of Service Design Characteristics for Concurrent BRT and Local Bus Service in Santa Clara County and Other Urban Corridors”.

## UTRC HOSTS A VISITING SCHOLAR FROM FRANCE; DR. MARTIN KONING



the hedonic valuation of road freight characteristics, the wider economic impacts of logistics platforms or of high-speed trains in France, as well as the use of bikes for freight purposes in the Paris area.

Dr. Koning’s visit at CCNY-UTRC during the summer 2014 period is related to the latter topic. With the collaboration of Dr. Alison Conway, Dr. Koning will work to quantify the external savings (reduced pollutants’ emissions in particular) induced by the increased use of bikes to move goods in Paris. Authors adopt a broad definition of goods’ movement since they consider both the activities of freight professionals (courier or delivery services) and the mobility of individual passengers for shopping purposes. To do so, they rely on two data sources: a regional household mobility survey and an ad-hoc numeric survey held this summer on freight professionals. After discussing the recent transport policies implemented in the Paris area, especially those aimed at accommodating the use of bikes, they will estimate the evolution, over 2001-2014, of the kilometers travelled by bikes to move goods and the corresponding tonnage. Using emissions’ parameters, they will then be able to estimate the environmental gains associated with such a change.

During the summer, UTRC hosted Martin Koning, a Ph.D. fellow, affiliated with IFFSTAR (French Institute of Science and Technology for Transport, Development and Networks - University of Paris-East). IFFSTAR is one of the team members of the Metrofreight team along with USC, CCNY and KOTI. Dr. Koning’s visit was in part, to participate, in part, to participate in the Volvo Center of Excellence (CoE) educational exchange requirements and to work with Alison Conway on her VREF urban freight-related research. Dr. Koning completed his doctorate in Economics in 2011 from Paris 1 - Panthéon Sorbonne University. His work mainly focused on transportation congestion in the Central Paris area: measurements and pricing schemes of congestion costs on the Paris Ring Road, valuation of crowding costs in Paris subways with the use of the contingent valuation technique, impacts of congestion costs and benefits within the socioeconomic assessment a new streetcar line in Paris. Since late 2012, Dr. Koning is a full-time researcher at the French Institute of Sciences and Technology for Transport, Development and Networks (IFSTTAR) where he works with the SLOTT-team, specialized on urban freight. He also teaches Transportation Economics for Master degree. His recent works concern

# MANAGEMENT STRUCTURE

UTRC has adopted a corporate style of management. In this style, the UTRC Board provides policy guidelines, and approval of UTRC activities. Dr. Camille Kamga, Assistant Professor of Civil Engineering at the City College of New York, serves as the Director, overseeing day-to-day operations and providing a bridge between UTRC policies and the activities and resources used to carry out those policies. The Board of Directors, with representatives from consortium universities, is chaired by Dr. John Falcocchio of NYU Poly School of Engineering and conducts its business through a well-organized committee structure. The full Board reviews center objectives and programs, approves budgets, and reviews and recommends actions forwarded by its two major working committees.

## BOARD OF DIRECTORS

### CITY UNIVERSITY OF NEW YORK, NEW YORK

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**Dr. Neville A. Parker** - Civil Engineering

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### COLUMBIA UNIVERSITY, NEW YORK

**Dr. Raimondo Betti** - Civil Engineering  
**Dr. Elliott Sclar** - Urban and Regional Planning

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**Dr. Huaizhu (Oliver) Gao** - Civil Engineering  
**Dr. Mark A. Turnquist** - Civil Engineering

### HOFSTRA UNIVERSITY, NEW YORK

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### MANHATTAN COLLEGE, NEW YORK

**Dr. Anirban De** - Civil & Environmental Engineering  
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**Dr. Marta Panero** - Engineering & Computing Sciences

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**Dr. Elena Prassas** - Civil Engineering

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**Dr. William "All" Wallace** - Civil Engineering

### ROCHESTER INSTITUTE OF TECHNOLOGY, NEW YORK

**Dr. J. Scott Hawker** - Software Engineering  
**Dr. James J. Winebrake** - Science, Technology,  
& Society/Public Policy

### ROWAN UNIVERSITY, NEW JERSEY

**Dr. Yusuf A. Mehta** - Civil Engineering  
**Dr. Beena Sukumaran** - Civil Engineering

### RUTGERS UNIVERSITY, NEW JERSEY

**Dr. Robert B. Noland** - Planning and Public Policy

### STATE UNIVERSITY OF NEW YORK (SUNY), NEW YORK

**Michael M. Fancher** - Nanoscience  
**Dr. Catherine T. Lawson** - City & Regional Planning  
**Dr. Adel W. Sadek** - Transportation Systems Eng  
**Dr. Shmuel Yahalom** - Economics & Maritime

### STEVENS INSTITUTE OF TECHNOLOGY, NEW JERSEY

**Dr. Sophia Hassiotis** - Civil Engineering  
**Dr. Thomas H. Wakeman III** - Civil Engineering

### SYRACUSE UNIVERSITY, NEW YORK

**Dr. Riyad S. Aboutaha** - Civil Engineering  
**Dr. O. Sam Salem** - Construction Engineering  
and Management

### THE COLLEGE OF NEW JERSEY, NEW JERSEY

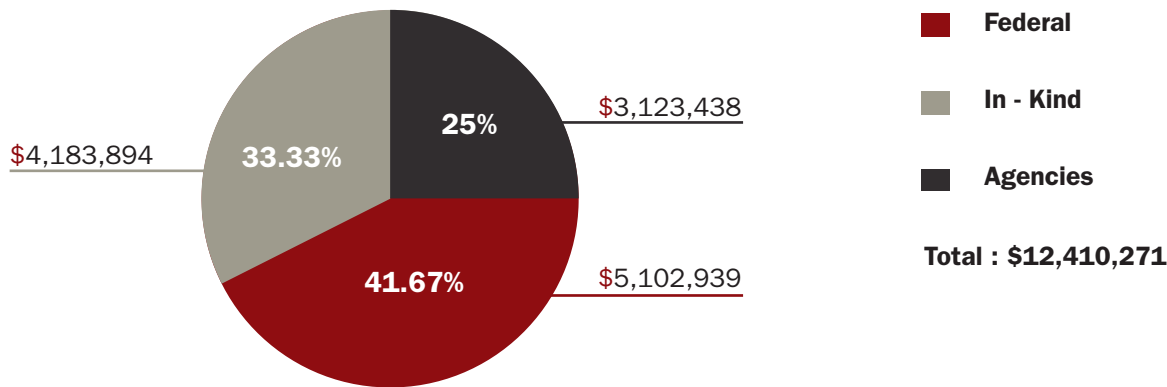
**Dr. Thomas M. Brennan, Jr.** - Civil Engineering

### UNIVERSITY OF PUERTO RICO – MAYAGÜEZ, PUERTO RICO

**Dr. Didier M. Valdes-Diaz** - Civil Engineering  
**Dr. Ismael Pagan-Trinidad** - Civil Engineering

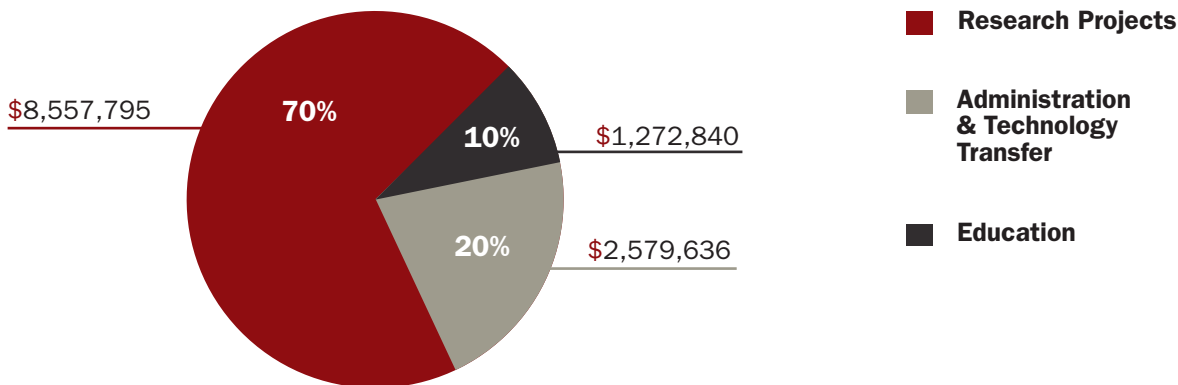
# FINANCIAL REPORT

## FUNDS



The following charts summarize the UTRC funding and allocations for the calendar year 2014. Under both transportation legislations – extension of SAFETEA-LU and MAP-21- the USDOT authorization for the Center was \$3,397,600 and \$2,592,500 respectively. Of this funding, UTRC allocated approximately \$5,102,939 to programs. This was an unusually large allocation for a single year, which resulted from delays in implementing some of the programs in 2013 due to the Center’s participation in a new competition to remain as a USDOT UTC center. We therefore supported our programs in 2014 from both grants.

## ALLOCATIONS



Continuing with its tradition, strong partnerships, and solid financial commitment from federal, state, and local transportation agencies, UTRC allocated 10 percent of its total budget to its educational initiatives and 70% to support and carry out many research projects. The remaining 20 percent was applied to administration and technology transfer programs.



# STAFF



**Dr. Camille Kamga**  
Director  
Assistant Professor of  
Civil Engineering



**Dr. Robert E. Paaswell**  
Director Emeritus  
Distinguished Professor of  
Civil Engineering



**Penny Eickemeyer**  
Associate Director  
for Research



**Herbert Levinson**  
UTRC Icon Mentor  
Professor of  
Transportation



**Nadia Aslam**  
Assistant Director for  
Technology Transfer



**Dr. Ellen Thorson**  
Senior Research Fellow



**Dr. Alison Conway**  
Associate Director for  
Education  
Assistant Professor of  
Civil Engineering



**Dr. Anil Yazici\***  
Post-doc/  
Senior Researcher  
\*Now at Stony Brook/SUNY



**Benjamin Miller**  
Senior Research  
Associate



**Matthew W. Daus, Esq**  
Distinguished Lecturer



**Nathalie Martinez**  
Research Associate  
Budget Analyst



**Abhishek Singhal**  
Ph.D. Candidate  
Research Associate



**Andriy Blagay**  
Graphic Design Intern



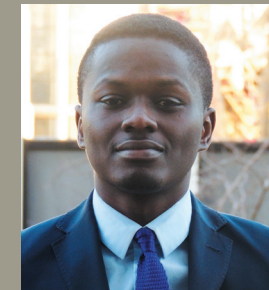
**Tierra Fisher**  
Office Assistant



**Sabiheh Faghieh**  
Research Assitant  
Ph.D. Candidate



**Dan Wan**  
Research Assitant  
Ph.D. Candidate



**Oti Agyenim**  
Research Assitant

# MEMBER UNIVERSITIES

## 1 CITY UNIVERSITY OF NEW YORK

The City University of New York is the nation's largest urban university: 11 senior colleges, 6 community colleges, a graduate school, a law school and a school of biomedical education. More than 450,000 degree-credit students and adult, continuing and professional education students are enrolled at campuses located in all New York City boroughs. CUNY, with more than 100 nationally recognized research centers, institutes and consortia, is also one of the nation's major research institutions. Because of its urban context, many of CUNY's campuses are involved in transportation research and education.

## 2 CLARKSON UNIVERSITY

We are the institution of choice for 3,000 enterprising, high-ability students pursuing degrees in 50+ rigorous academic programs of study. Our faculty are on the leading edge of research of international relevance and we offer focused graduate programs in select disciplines, however, our primary mission is undergraduate education. Across the institution, faculty and students develop close, mentoring relationships and make lifelong connections that guide career success.

## 3 COLUMBIA UNIVERSITY

Columbia University was founded in 1754 as King's College by royal charter of King George II of England. It is the oldest institution of higher learning in the state of New York and the fifth oldest in the United States. Today it has an enrollment of over 23,000 students in 16 schools and colleges. Columbia conducts transportation-related research through its strong departments of Urban Planning, Civil Engineering, and Industrial Engineering and Operations.

## 4 CORNELL UNIVERSITY

Founded in 1868 by Andrew White and Ezra Cornell as an institution where "any person can find instruction in any study," Cornell University today encompasses thirteen undergraduate, graduate, and professional colleges and schools. Cornell is a unique combination of public and private divisions, being both a private, nonsectarian university and the land-grant institution of New York State.

## 5 HOFSTRA UNIVERSITY

Hofstra University can help you get where you want to go, with small classes, dedicated faculty and a beautiful, energized campus, plus all the opportunities of New York City within easy reach. Find your future by choosing from about 150 undergraduate and about 160 graduate programs, in Liberal Arts and Sciences, Business, Communication, Education, Health and Human Services and Honors studies, as well as a School of Law and School of Medicine. The student-faculty ratio of 14 to 1 and a priority on teaching excellence ensures you're part of creating your own success.

## 6 MANHATTAN COLLEGE

Manhattan College is a Lasallian educational institution founded in 1853 by the De La Salle Christian Brothers, a Catholic religious teaching order started by Saint John Baptist de La Salle, the patron saint of teachers. De La Salle is known as the innovator of modern pedagogy for his work establishing schools to educate disadvantaged children in 17th century France.

## 7 NEW JERSEY INSTITUTE OF TECHNOLOGY

The New Jersey Institute of Technology (NJIT) is a public research university enrolling nearly 8,100 students in 92 degree programs. NJIT has built its research program around multi-disciplinary centers that encourage partnerships among various disciplines, as well as with other educational institutions, private enterprise and government agencies. NJIT hosts a number of publicly and privately funded research initiatives.

## 8 NEW YORK INSTITUTE OF TECHNOLOGY (NYIT)

A global, private institution of higher education, NYIT has 14,000 students on campuses in North America, China, the Middle East, and online. Since 1955, NYIT has pursued its mission to: Provide career-oriented professional education. Give all qualified students access to opportunity. Support applications-oriented research that benefits the larger world.



# MEMBER UNIVERSITIES

## 9 NEW YORK UNIVERSITY

Founded in 1831, New York University is one of the largest private universities in the United States, with nearly 51,000 students. The University, which includes 14 schools and colleges, occupies six major centers in Manhattan. NYU is home to the Robert F. Wagner Graduate School of Public Service, which engages transportation issues through programs in Urban Planning, Public Management and Finance, and Negotiation and Conflict Resolution.

## 10 NYU Polytechnic School of Engineering

NYU Polytechnic School of Engineering is a comprehensive school of engineering, applied sciences, technology and research, and is rooted in a 158-year tradition of invention, innovation and entrepreneurship. The institution, founded in 1854, is the nation's second-oldest private engineering school. In addition to its main campus in New York City at MetroTech Center in downtown Brooklyn, it also offers programs at sites throughout the region, around the globe and remotely through online learning.

## 11 RENSSELAER POLYTECHNIC INSTITUTE

RPI was established in Troy, NY in 1824. It has the oldest program in Civil Engineering in the English-speaking world. Today the university has 7,000 students and schools of Architecture, Engineering, Humanities, Management, and Science. RPI provides regional, national, and international leadership in research relating to intelligent transportation systems, transportation modeling, traffic operations, intermodal freight transportation, transportation economics, and analytical approaches to emergency management.

## 12 ROCHESTER INSTITUTE OF TECHNOLOGY

RIT is a place where brilliant minds assemble and collaborate, where they pool together their individual talents across disciplines in service of big projects and big ideas. It is a vibrant community teeming with students collaborating with experts and specialists: a hub of innovation. It is an intersection of disciplines, a launching pad for a brilliant career, and a highly unique state of mind. It is a perfect environment in which to pursue your passion. Here, the future is envisioned each day. And remade each day after.

## 13 ROWAN UNIVERSITY

Established as a normal school in 1923, today Rowan is a comprehensive public university serving nearly 10,000 students in a Graduate School and colleges of Business, Communication, Education, Engineering, Fine & Performing Arts, and Liberal Arts & Sciences. Rowan's Civil and Environmental Engineering Department conducts transportation research in the areas of pavement design, materials, rail crossing safety, structural design of bridges, and structural design and testing of transit vehicles.

## 14 RUTGERS UNIVERSITY\*

From its roots as a colonial college (chartered in 1766) and land-grant institution, Rutgers has developed into one of America's leading public research universities. New Jersey's state university fulfills its three-part mission of instruction, research and service by educating a diverse student body of over 48,000 on its three campuses, by creating new knowledge, and by contributing to the economic and cultural vitality of the state.

*\*Member under SAFETEA-LU*

## 15 STATE UNIVERSITY OF NEW YORK (SUNY)

The State University of New York's 64 geographically dispersed campuses bring educational opportunity within commuting distance of virtually all New Yorkers and comprise the nation's largest comprehensive system of public higher education. Across this network, SUNY has many capabilities that relate directly and indirectly to transportation research. In addition to the major research clusters described below, UTRC works with individual faculty members at SUNY Colleges at Oneonta, Farmingdale, and Alfred.

## 16 STEVENS INSTITUTE OF TECHNOLOGY

Founded in 1870 in Hoboken, New Jersey, the Stevens Institute of Technology is one of the leading technological universities in the country. It is named for a distinguished family in American engineering, dating back to the early days of the Industrial Revolution, that helped pioneer the development of the steamboat and railroad technology. Research at Stevens Institute includes structural dynamics, soil-structure interaction, freight transportation, and embedded, real-time, intelligent infrastructure systems.

## 17 SYRACUSE UNIVERSITY

From its founding in 1870, Syracuse University has been the embodiment of Scholarship in Action-education that transcends traditional boundaries through a combination of innovative thinking, daring choices and entrepreneurial attitude. The iconic campus is nestled amongst the rolling hills of Central New York-itself a crucible of historic change and progress. Building on that foundation, SU continues to create opportunities for students and faculty to push limits,

build pathways, and make connections that lead to new discoveries and transformational change.

## 18 THE COLLEGE OF NEW JERSEY

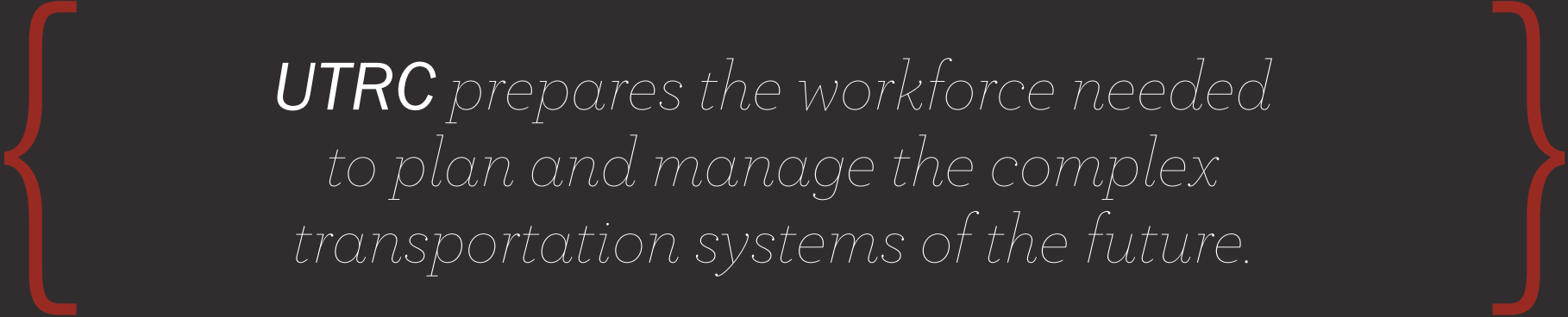
The College of New Jersey (TCNJ) is a highly selective institution that has earned national recognition for its commitment to excellence. Founded in 1855, TCNJ has become an exemplar of the best in public higher education and is consistently acknowledged as one of the top comprehensive colleges in the nation. TCNJ currently is ranked as one of the 75 "Most Competitive" schools in the nation by Barron's Profiles of American Colleges and is rated the No. 1 public institution in the northern region of the country by U.S. News & World Report.

## 19 UNIVERSITY OF PUERTO RICO - MAYAGÜEZ

The University of Puerto Rico was established in 1903. Transportation research at UPR is concentrated on its Mayagüez campus, which serves over 12,000 students in colleges of Agricultural Sciences, Engineering, Arts and Sciences, and Business Administration. Its Department of Civil Engineering has an active program in natural hazards research with applications in transportation, including research in structures, advanced materials, earthquake engineering, and construction management issues. Its Civil Infrastructure Research Center is funded by FEMA, FHWA, and the Puerto Rico Department of Transportation, and other partners.



**EDUCATION  
& WORKFORCE  
DEVELOPMENT**



*UTRC prepares the workforce needed  
to plan and manage the complex  
transportation systems of the future.*

The modern professional must combine the technical skills of engineering and planning with knowledge of economics, environmental science, management, finance, and law as well as negotiation skills, psychology and sociology. And, she/he must be computer literate, wired to the web, and knowledgeable about advances in information technology. UTRC's education and training efforts provide a multi-disciplinary program of course work and experiential learning to train students and provide advanced training or retraining of practitioners to plan and manage regional transportation systems. UTRC must meet the need to educate the undergraduate And graduate student with a foundation of transportation fundamentals that allows for solving complex problems in a world much more dynamic than even a decade ago. Simultaneously, the demand for continuing education is growing – either because of professional license requirements or because the workplace demands it – and provides the opportunity to combine State of Practice education with tailored ways of delivering content.

## SEPTEMBER 11TH MEMORIAL PROGRAM-2014-15

The NYMTC/September 11th Memorial Program Academic Initiative entered its ninth year of the program in September 2014. In August, a selection committee comprised of representatives from NYMTC and its members awarded two students with internship positions for the 2014 – 2015 academic year. The awardees included:

### Dan Wan

Ph.D. Candidate,  
Civil Engineering (Transportation),  
CUNY Graduate Center



Internship Supervisor – Aaron Sugiura, NYCDOT

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

#### Internship Topic:

#### Customer Perception of Select Bus Service Enhancements

Dan Wan is a PhD student in Transportation Engineering, Department of Civil Engineering in CCNY of CUNY. Her research interests are big data analysis, transit, signal control, and transport finance.

Through her internship at NYCDOT, Dan will distribute a survey to select bus customers to try to determine how bus riders perceive different elements of SBS, including advanced off-board fare payment, traffic signal priority, improved bus lanes, real time bus arrival information, and BRT vehicles. This information will help NYCDOT and NYCT design future SBS routes to maximize the elements that have positive impacts on ridership.

To complete this project, Dan needs to work closely with transit professionals, do on-board survey, deal with real world data, and use analysis tools. She will work with Transit Development Group in NYCDOT.

### Gauri Jumde

Master's Candidate in Urban Planning  
at the Robert F. Wagner Graduate School  
of Public Service at NYU



Internship Supervisor – Larry McAuliffe, NYMTC

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

#### Internship Topic:

#### Development of a Regional Bicycle-Pedestrian Handbook

Gauri will participate in an internship at NYMTC on a project related to the development of a Regional Bicycle-Pedestrian Handbook. Her involvement in the project will be supervised jointly by her NYMTC supervisor, Larry McAuliffe, and Penny Eickemeyer of UTRC. Her faculty advisor is Dr. Zhan Guo.

Gauri will assist NYMTC in the development of a Bicycle-Pedestrian Handbook. Through her work, she will research best practices and work with stakeholder groups in order to determine the most beneficial information for the handbook.

# UTRC AWARDS 2014 AITE SCHOLARSHIP

This year, UTRC has held two rounds of competition for the Advanced Institute for Transportation Education (AITE) Program. The 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. The University match can be provided in the form of tuition support, non-federally funded fellowship or scholarship support, or faculty release time to support the student's research. The agency match is provided in the form of work-release-time valued by the employee's salary.

Five scholarships were awarded in June 2015 for the Fall 2014 semester. Additional awards were made in December for students whose support will begin in Spring 2015. Detailed information on the Fall 2014 AITE Scholarship recipients is provided below.

## Najwa Doughman

New York University



**Najwa Doughman** is currently pursuing a Master of Urban Planning at New York University's Robert F. Wagner School of Public Service with a concentration in International Development. She holds a Bachelor of Science degree in Architecture from the University of Virginia and has since acquired 5+ years of design, planning and construction project management experience in Egypt, Lebanon, Washington D.C., and New York City. Through the AITE Scholarship Program, she is researching the incentives, obstacles and impacts of Long and Super-commuting into the five Boroughs of New York City, specifically focusing on the construction worker community.

## Lily Gordon-Koven

New York University



**Lily Gordon - Koven** is a Master of Urban Planning Candidate at NYU Wagner, with a Environment, Infrastructure, and Transportation specialization. She is currently a Planning Intern at the New York City Department of Transportation with the Research, Implementation, and Safety group and a Research Assistant at the Rudin Center for Transportation Policy and Management. She holds a B.A. in Geography and Urban Studies from Macalester College in Saint Paul, Minnesota. Before coming to Wagner, Lily worked as a subsidized housing case manager in Chicago. She also spent a year as a Complete Streets Fellow at the National Complete Streets Coalition with Smart Growth America. She is interested in equitable access to public transportation, pedestrian and bicycle safety and planning, community engagement, and public space. Description

of Masters -NYU Wagner's Master of Urban Planning program brings students into direct contact with the critical urban challenges of our time. Today's urban planners must balance development, community needs and social justice, provision of critical public services, sustainability and security. Housed within a school of public service, rather than a school of architecture, the Master of Urban Planning program uses the broader contexts of policy, management and finance to prepare students with the critical thinking they need to succeed in urban design, land use, economic and community development, housing, and environmental and infrastructure planning.

# UTRC AWARDS 2014 AITE SCHOLARSHIP

## Sandy Johnston

University at Albany, SUNY



**Sandy Johnston** is a student in the Master of Regional Planning program at the University at Albany, concentrating in Transportation and Planning to complete a certificate in Urban Policy as well. He arrived in Albany after living previously in Portland, OR; a small town in Iowa; New Haven, CT; Chicago; Jerusalem; and New York City, and so considers himself well-versed in different kinds of urban forms and personalities. Intending to embark on a career in public transit planning, Sandy's interests include the political economy of transit, transit-oriented development, freight rail, and affordable development; he also admits an interest in Art Deco architecture. His research project will explore the political forces behind the building of transit infrastructure, comparing Philadelphia's Center City Commuter Connection with a more recent light-rail system in the US. Sandy has previously interned at the Center for Neighborhood Technology in Chicago, and can be found blogging at [www.itineranturbanist.ss.com](http://www.itineranturbanist.ss.com) and on Twitter [@sandyps](https://twitter.com/sandyps).

## Gary Jordan

University at Buffalo, SUNY



**Gary Jordan** is pursuing a Master of Science degree in Civil Engineering from SUNY-Buffalo's Civil, Structural, and Environmental Engineering Department, with an Area of Study in Transportation Systems Engineering. UB's Transportation Systems Engineering program focuses on improving the efficiency, safety, sustainability, and resiliency of surface transportation systems. This program integrates research in intelligent systems, advanced computing, hazard mitigation, simulation and econometric modeling. The goal of Gary's research is to develop new statistical models of elderly mobility patterns in order to favorably impact the livability among the aging population (e.g., better safety, lower transportation expenses, better access to medical care, and higher productivity of the elderly). Gary holds a Bachelor of Science in engineering physics from the United States Military Academy at West Point, a Master of Arts degree in economics from the University of New Hampshire, and an MBA with a concentration in finance from the University of Maine.

## Lerone Savage

Hunter College, CUNY



**Lerone Savage** is enrolled in the Master in Geography program at Hunter College, CUNY. For his graduate research project, he plans to work on building a framework in a Cloud Server for a transportation model for New York City under Professor Hongmain Gong's supervision. The framework will link together several existing transportation-related research components at Hunter College. The finished model will have the capabilities to read GPS, accelerometer data, social media tweets from smartphones, combine them with Geographic Information Systems (GIS) databases (transportation, land use, etc.) to detect transportation modes and trip purposes, and display the results in a web site for editing or other application uses in New York City. Specifically, Mr. Savage will develop Python algorithms to utilize GPS and accelerometer data for calculating speeds, accelerations, and activity nodes in order to divide daily travel trajectories into trips, to combine various data to classify trip purposes, and to differentiate amongst travel modes such as walk, car, subway, bus, and commuter rail for each

trip segment. He will also link his carpool verification algorithm from his undergraduate senior thesis into the model so that it can be used for institutions in New York. The finished model can be used to estimate carbon footprint and calories-burned for the users. The model from this project holds the potential to improve the ways that mode detection and trip purpose speculation are calculated and can be used to inform people about how to change their commute in a way that helps the environment and simultaneously makes them healthier. In his Master's program, he plans to take more transportation, GIS, and computer sciences courses to provide him with the skills and theoretical background for completing the proposed research project.



# UTRC AWARDS 2014 AITE SCHOLARSHIP

## Umesh Somrah

New York University



**Umesh Somrah's** engineering educational career commenced at the secondary school level at the High School for Construction Trades, Engineering, and Architecture, where he graduated as valedictorian. Subsequently, Umesh attained his Bachelor's in Civil Engineering with a minor in Construction Management at the New York University Polytechnic School of Engineering in May of 2014. In effort to explore his interest in transportation engineering, during his enrollment at NYU and following his graduation, he worked with Phillip Habib and Associates, a consulting engineering firm that specializes in the planning and design of transportation facilities, traffic and civil engineering. To further his knowledge in the field, Mr. Somrah is in the process of pursuing a Master's degree in the field of Transportation Planning and Engineering at NYU. He plans on focusing on research in high density pedestrian intersections, like Time Square, to improve the pedestrian level of service without or with negligible effects to the vehicular traffic.

## Jesse Vogl

State University of New York, SUNY



**Jesse Vogl** is currently enrolled in the Masters of Urban and Regional Planning Program at the University at Albany, SUNY concentrating in transportation planning. His research focuses on the similarities and differences between passenger transit and urban freight operations in an attempt to develop a more efficient system for urban freight deliveries. Namely, as Bus Rapid Transit (BRT) systems attempt to emulate passenger rail in order to achieve efficient movement of people, so too could trucks be made to mimic freight rail. This would result in a system that could reduce congestion, greenhouse gas emissions, and overall shipping costs.

## Ethan Warren

University at Binghamton, SUNY



In August 2014, **Ethan Warren** started as a Master's of Regional Planning student at SUNY Albany, with a concentration in transportation. After his undergraduate program in sociology at SUNY Binghamton and an Americorps term with Mobility Management of South Central New York, Ethan decided to pursue planning as a career. He hopes to center his research project around how best to serve disadvantaged populations and promote equity through transit-oriented development.

## UTRC REGION 2'S STUDENT FROM ROWAN UNIVERSITY RECEIVES THE "2013 UTC OUTSTANDING STUDENT OF THE YEAR" AWARD



Sean Coffey, a graduate research assistant in the Civil and Environmental Engineering Department at Rowan University was presented the 2013 UTC Student of the year award at the CUTC Banquet at 23rd Annual Outstanding Student of the Year Awards at TRB meeting, held on January 11, 2014 at Washington, DC. Sean was selected on the basis of his technical merit, research and academic performance. He graduated in May 2012 with a bachelor's degree in civil engineering with honors and anticipates completing his master's degree in civil engineering in December 2013.

Sean started his graduate studies by being the first Rowan University student to receive the UTRC Advanced Institute for Transportation Education (AITE) Graduate Fellowship. Sean has worked on various projects for both the New Jersey Department of Transportation (NJDOT) and the Rhode Island Department of Transportation (RIDOT). His initial project looked at reclaimed asphalt

pavement (RAP) variability and its effect on pavement performance when used in higher percentages. NJDOT has been restricted to using less than 15 percent of RAP in surface layers of pavement due to variability. Sean's work gave insight in how to control this variability issue.

The NJDOT project, he most recently work on, focuses on correlating multiple stress creep recovery results with polymer modification in binders. Sean's main task was to create a Microsoft Access database that will store all of the data, making it searchable and completing basic calculations for the user. He has also been working on predictive pavement performance and preservation for RIDPT.

Based on his academic achievement and work in the area of asphalt pavement materials, the University Transportation Research Center is proud to select Sean Coffey as its 2013 Outstanding Student of the Year.

## UTRC SPONSORED THE 2014 ITS-NY BEST STUDENT PAPER ESSAY AWARD



Lei Lin (Right) receiving the "2014 ITS Best Student Paper Essay" from the ITS-NY President Isaac Tayki (Left) and Co-Chair, Dr. Camille Kamga (Middle)

UTRC has sponsored the 2014 ITS-NY Best Student Paper Essay award. This year's winner was Lei Lin, a Ph.D. candidate at the University at Buffalo, SUNY. The winner was announced at the ITS-NY 21st Annual Meeting and Technology Exhibition in Saratoga Springs, NY, held on June 12-13, 2014. His winning essay entitled, "An Android Smartphone Application for Collecting, Sharing and Predicting the Niagara Frontier Border Crossings Waiting Time," has been selected as the Winner of the ITS-NY 2014 Best Student ITS Paper Competition.

Mr. Lei Lin is currently a Ph.D. candidate in the Department of Civil, Structural and Environmental Engineering at UB, specializing in Transportation Systems Engineering. He is also pursuing an M.S. degree in Computer Science at UB. In addition, Mr. Lin holds a M.S. in Systems Engineering and a B.S. degree in Traffic and Transportation Engineering, both from Beijing Jiao Tong University in China. He works with Dr. Adel W. Sadek

and Dr. Qian Wang at UB. His research interests are in the area of Transportation informatics, data mining, machine learning and traffic engineering. He has four refereed journal publications, along with several others under review, and other refereed conference proceedings. Mr. Lin will graduate in September, 2014. He has already accepted a position of Research Scientist Post-Doc within Xerox Innovation Group, Xerox Research Center, focusing on system design and data analytics in transportation.

In addition to a networking experience with transportation experts, Mr. Lin received a \$500 stipend along with a complimentary 2012 ITS-NY Annual Meeting registration, travel and lodging benefits to attend all technical sessions presented at the Annual meeting.

To access the 2014 Best Student ITS Essay, please visit:  
[www.its-ny.org/pdf/LeiLinBestEss2014.pdf](http://www.its-ny.org/pdf/LeiLinBestEss2014.pdf)

## UTRC WOMEN'S TRANSPORTATION SEMINAR AWARD WINNER (LEONARD BRAUN MEMORIAL GRADUATE SCHOLARSHIP)



Photo by Patrick Cashin/Metropolitan Transportation Authority

(from left): Penny Eickemeyer, Associate Director for Research, US DOT Region 2 University Transportation Research Center; WTSGNY Scholarship Committee Chairperson Keri Cibelli; Scholarship Recipients Gabrielle Kempfski, Maria Kezadri, Judith Zhao, Quanguan Chen, Wei Zou; and NYCDOT Commissioner Polly Trottenberg.

The 2014 Leonard Braun Memorial Graduate Scholarships went to Wei Zou and Quanguan Chen. UTRC made a contribution to the award given to Ms. Zou. She received her Master of Science from UC Davis and Bachelor of Science from the University of Hong Kong. Ms. Zou is currently developing a comprehensive freight accident database and using rigorous statistical models to analyze freight crashes, aiming to propose strategies to prevent road accidents and minimize the potential losses brought by such tragedies. While in California, Ms. Zou has worked as an intern at the Governor's Office of Planning and Research and a consultant at the Inter-

national Council of Clean Transportation. Before entering the graduate school with a full scholarship, she was working as a graduate engineer at AECOM Asia in Hong Kong and actively involved in all kinds of volunteering work. Apart from research, Ms. Zou enjoys cooking, traveling, playing the piano and ukulele. Upon graduation, Ms. Zou plans to work with other professionals to improve accessibility in rural areas, to promote the application of new technologies in urbanized cities, and to raise people's awareness of road safety, through sustainable transportation projects.

Quanguan Chen is a third year Transportation Ph.D candidate in the Civil Engineering department at the City College of New York. She obtained her Master of Science in Logistics Engineering from Southwest Jiaotong University, China and Bachelor of Science in Transportation Management from Central South University, China. During her first year of Ph.D study, Ms. Chen was responsible for a field survey of truck delivery operators in New York City to understand freight delivery patterns such as vehicle travel routes, delivery tour characteristics, travel and delivery times and vehicle load factors.

Now, Ms. Chen is applying her existing fields of knowledge, such as logistics, last mile delivery and supply chains to identify effective road and curb policies for urban freight. Ms. Chen's future research will focus on specific research of understanding the costs of urban freight operations and analyzing approaches to improve last mile delivery in urban areas. Ms. Chen hopes to help residents to obtain high quality lives supported by smooth supply chains and freight systems that are friendly to livable communities.

For the past four years, UTRC has sponsored an informal internship program for students studying transportation planning and engineering at Ecole Nationale des Travaux Publics de l'Etat (ENTPE), one of the top French engineering schools located in Lyon, France. ENTPE students are required to undertake an internship between their second and third years of graduate study and in 2010, one student, Nhat Bui, contacted then UTRC Director Buz Passwell to inquire whether UTRC could provide an internship for him. That year, Professor Professor Darius Sollohub of the Architecture Department at the New Jersey Institute of Technology, agreed to supervise Nhat. From that point on, students have contacted the Center each year to inquire about internships. UTRC agrees to take a student if a PI agrees to supervise the student and has a research topic in which the student can assist. To-date fourteen students have undertaken 20-week internships with UTRC and another three have just begun this year. In addition to Professor Sollohub, supervisors have included Drs. Alison Conway, Kyriacos Mouskos, Anil Yazici, Camille Kamga, Huiming Yin (Columbia), and Zhan Guo (NYU). In addition, Dr. Michel Ghosn of the Department of Civil Engineering at CCNY has also supervised ENTPE interns. Some of these students have even had the opportunity to return to the US to present their work at the Transportation Research Board's annual meeting in Washington, DC the following January. During their stay in NYC, students are supported by the French government and in return, as civil servants, they are required to work for the French government for eight years.

Three students began interning in April 2014. They are Charlotte Gachon, Gaetan Petite, and Benjamin Demont. They are supervised by Michael Bobker, Baruch, Alison Conway, CCNY, and Kyriacos Mouskos, CCNY.

# UTRC CONTINUES HOSTING FRENCH INTERNS

Additional information about their research follows below.

## Demont Benjamin



Demont Benjamin is currently a second year master student in the transportation program at the ENTPE which is a national graduate school with specialization in construction, civil engineering, transport and urban planning programs. He is pursuing his degree in transportation and plans to work with the French government after his graduation. During his coursework, he aims to look into different transportation fields and address the system issues to make it more sustainable.

During his internship, he will be working under the supervision of Dr Kyriacos Mouskos. He is also working with a Ph.D. student Patricio Vicuna on timing phase application. He is working on a project related to intersection signalization using transportation software tools; VISSIM or SYNCHRO to have an approach on signal timing under an existing arterial road (WOLF Road, Albany). He will compare software results with existing conditions and then optimize signal timing of all Wolf Road's intersections.

## Charlotte Gachon



Charlotte is working at UTRC under the supervision of Michael Bobker, Director of the CUNY Building Performance Lab. She is working on the difference in building codes and standards in Europe and the United States and the different tools for measuring the energy performance. After her graduation, she intends to work for her State as a manager in a building center.

## Gaetan Petite



Gaetan Petite is a master student at the University of ENTPE in France, majoring in transportation engineering. Under the supervision of Dr. Alison Conway, Gaetan is working on a project related to freight transportation and parking issues in Manhattan.

Gaetan has taken courses in transportation economy, transportation policy, and traffic modeling. He is interested in forecasting traffic issues. As a civil servant, he will work for his state in the French Department of Transportation after his graduation.

## UTRC/NYMTC'S 9/11 SCHOLARSHIP RECIPIENTS' PRESENTATIONS AT THE NYMTC BROWN BAG SEMINAR



From L to R: Nathalie Martinez, UTRC; Penny Eickemeyer, UTRC; Homer Hill, Hunter College; Renee Alexander; Emily Grace Heard, Columbia University; Joel Ettinger, NYMTC



Photos by John Lopez/ New York Metropolitan Transportation Council (NYMTC)

On September 17, 2014, two recipients of the 2013-14 academic year presented at the Brown Bag Seminar held at NYMTC for the September 11th Memorial Program for Regional Transportation Planning. The Program provides assistance to students and organizations for projects in both academic and public policy arenas as a way to educate and motivate those who are interested in transportation technology and planning. Penny Eickemeyer, UTRC Associate Director for Research, moderated the recipients' presentations.

The Brown Bag seminar highlighted the work of two 2013-14 academic year participants:

- Emily Heard, Masters of Urban Planning Candidate, Columbia University Strategies for Integrating Land Use and Transportation Planning

- Homer Hill, Master's of Urban Planning candidate, Hunter College, CUNY

Project: Greenhouse Gas (GHG) Emission Reduction Implementation Planning

The image features a collage of several open books, their pages fanned out, creating a sense of depth and movement. The books are set against a background of bold, diagonal red stripes that cut across the frame. The overall aesthetic is modern and academic. The word 'RESEARCH' is prominently displayed in white, bold, uppercase letters on a dark red rectangular background that is part of the geometric design.

# RESEARCH



*The UTRC's research program addresses the needs of regional transportation.*

The research program objectives are (1) to develop a theme based transportation research program that is responsive to the needs of regional transportation organizations and stakeholders, and (2) to conduct that program in cooperation with the partners. The program includes both studies that are identified with research partners of projects targeted to the theme, and targeted, short-term projects. The program develops competitive proposals, which are evaluated to insure the most responsive UTRC team conducts the work. The research program is responsive to the UTRC theme: "Planning and Managing Regional Transportation Systems in a Changing World." The complex transportation system of transit and infrastructure, and the rapidly changing environment impacts the nation's largest city and metropolitan area. The New York/New Jersey Metropolitan has over 19 million people, 600,000 businesses and 9 million workers. The Region's intermodal and multimodal systems must serve all customers and stakeholders within the region and globally. Under the current grant, the new research projects and the ongoing research projects concentrate the program efforts on the categories of Transportation Systems Performance and Information Infrastructure to provide needed services to the New Jersey Department of Transportation, New York City Department of Transportation, New York Metropolitan Transportation Council, New York State Department of Transportation, and the New York State Energy and Research Development Authority and others, all while enhancing the center's theme.

# UTRC NEWLY AWARDED PROJECTS

UTRC has funded the following projects in response to its 2013-14 Faculty Initiated Proposals. The projects fall into the following research categories:

- Faculty Initiated
- Emerging Investigators
- Education and Technology Transfer

## 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.

PI(s)	Institution	Project Title
Robert Noland	Rutgers	Omitted Variable Bias in Crash Data Analysis
Ricardo Daziano	Cornell	Analyzing Willingness to Improve the Resiliency of New York City's Transportation System
Rae Zimmerman	NYU	Suburban Poverty, Public Transit, Economic Opportunities and Social Mobility
Steven Chien	New Jersey Institute of Technology	Optimizing Work Zones for Highway Maintenance with Floating Car Data (FCD)
John Bullough	RPI	Demonstrations of Urban Outdoor Lighting for Pedestrian Safety and Security
Qing He	University at Buffalo, SUNY	Smarter Multi-modal Traffic Signal Control with Both Floating Sensor Network and Fixed Sensor Network
Jeff Ban	RPI	Investigating the Network System Effects of Mileage Fees
Riyad Aboutaha	Syracuse University	The Economy of Preventive Maintenance of Concrete Bridges
Fadi Karaa	New Jersey Institute of Technology	Requirements, Model and Prototype for a Multi-Utility Locational and Security Information Hub
Rajan Batta	University at Buffalo, SUNY	Effective and Equitable Supply of Gasoline to Impacted Areas in the Aftermath of a Natural Disaster
Karl Korfmacher	Rochester Institute of Technology	Modeling Emissions and Environmental Impacts of Transportation Activities Associated with High Volume Horizontal Hydraulic Fracturing Operations in the Marcellus Shale Formation

PI(s)	Institution	Project Title
Yusuf Mehta	Rowan	Truck Driver Fatigue Assessment using a Virtual Reality System
Panagiotis Ch. Anastopoulos	University at Buffalo, SUNY	Evaluation of Public-Private Partnership Contract Types for Roadway Construction, Maintenance, Rehabilitation, and Preservation
Elena Prassas	NYU Poly	Development of a New Connected Eco-Driving Technology at Signalized Intersections with Adaptive Signal Control
Cara Wang	RPI	Investigating Temporal Effects on Truck Accident Occurrence and Severity Levels in New York City
Alexander Orlov	Stony Brook, SUNY	Nitrogen Dioxide Sequestration Using Demolished Concrete and Its Potential Application in Transportation Infrastructure Development
Hongmian Gong	CUNY	Integrating Real-time GIS and Social Media for Qualitative Transportation Data Collection
Alison Conway Dr. Cara Wang	CCNY	Freight Costs at the Curbside: Impacts of Accessibility Restrictions
Catherine Lawson	University at Albany, SUNY	Techniques for Information Extractions from Compressed GPS Traces



## FACULTY INITIATED PROJECTS

PI(s)	Institution	Project Title
Huiming Yin	Columbia	Characterization and Modeling of Photon Absorption in Asphalt Materials for Improved Accuracy and Consistency of Nuclear Density Measurement
H Oliver Gao	Cornell	Evaluating the Role of Private Investment in Life Cycle Management of New York State's Infrastructure Assets
William T. Riddell	Rowan	Effect of plug in hybrid electric vehicle adoption on gas tax revenue, local pollution and greenhouse gas emissions
Jose Holguin-Veras	RPI	Impacts of Freight Parking Policies in Urban Areas: The Case of New York City
David King	Columbia	Understanding Transit Finance: An Analysis of Transit Funding Around the World
Kaan Ozbay	NYU Poly	Real-time Estimation of Transit Origin-Destination Patterns and Delays Using Low-Cost Ubiquitous Advanced Technologies
Jiyoung Park	University at Buffalo, SUNY	The Ties that Bind: Developing a Bi-national Transportation-Combined Economic Simulation Model to Assess Security and Policy Implications of US-Canada Border Bridges
Sulapha Peethamparan	Clarkson	Characterizing and quantifying the shrinkage resistance of Cement Free Concrete and evaluating potential mitigation methods for reducing early age cracking in pavements and bridges
Thomas Wakeman	Stevens Institute of Technology	Port Resilience: Overcoming Threats to Maritime Infrastructure and Operations from Climate Change

## 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

PI(s)	Institution	Project Title
James Cohen	CUNY	Finance, Speed And Rail Infrastructure Improvement
Qian Wang	University at Buffalo, SUNY	Freight Demand Forecasting in the Context of the Built Environment: An Integrated Land Use and Travel Demand Modeling Approach

PI(s)	Institution	Project Title
Jiyoung Park	University at Buffalo, SUNY	Panama Canal Expansion and the Economic Impacts on New York and New Jersey States
Ya Wang	Stony Brook	Broadband Hybrid Electromagnetic and Piezoelectric Energy Harvesting from Ambient Vibrations and Pneumatic Vortices Induced by Running Subway Trains
Thomas Brennan	TCNJ	Characterizing Highway Corridor Length to Evaluate Travel Time Reliability using Probe Vehicle Data
Jee Eun Kang	University at Buffalo, SUNY	Development of the Household Activity Pattern Problem as an Activity-Travel Simulator
Hao Wang	Rutgers	Nondestructive Evaluation of Pavement Structural Condition for Rehabilitation Design - Rutgers

## 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.

PI(s)	Institution	Project Title
Jose Holguin-Veras	RPI	Improving Freight System Performance in Metropolitan Areas
Changxu Wu	University at Buffalo, SUNY	Addressing the Four Leading Factors of Accidents of Young Drivers in Region II using a New Driver Feedback System
Mitchell Moss	NYU	Adaptable Transportation Models for the New York Region
William Wallace	RPI	Mobile Information Technology for Improving Traffic Management at Planned Special Events: A case study of the New York State Fair New York Region
Mitchell Moss	NYU	Preparing Emerging Leaders in Transportation Innovation

# COMPLETED PROJECTS

For the year 2014, UTRC has completed following projects and published their final reports online at UTRC's website.

PI(s)	Institution(s)	Project Title	Sponsor(s)
Dr. Alexander Orlov	State University of New York (SUNY)	Developing Self-cleaning and Air Purifying Transportation Infrastructure Components to Minimize Environmental Impact of Transportation. Final Report: <a href="http://www.utrc2.org/publications/final-self-cleaning-transportation-infrastructure-components">http://www.utrc2.org/publications/final-self-cleaning-transportation-infrastructure-components</a>	UTRC
Dr. Ali Maher	Rutgers University	Effects of New Jersey's Cell Phone and Text Ban. Final Report: <a href="http://www.utrc2.org/publications/final-NJ-cell-phone-and-text-ban">http://www.utrc2.org/publications/final-NJ-cell-phone-and-text-ban</a>	UTRC
Dr. Camille Kamga & Dr. Satish V. Ukkusuri	City University of New York	A Decision Support Model to Understand Route Choice Decisions and Siting of Facilities in Emergency Evacuation Final Report: <a href="http://www.utrc2.org/publications/decision-support-model-emergency-evacuation">http://www.utrc2.org/publications/decision-support-model-emergency-evacuation</a>	UTRC
Dr. Changhyun Kwon	State University of New York (SUNY)	Towards Socially and Economically Sustainable Urban Developments: Impacts of Toll Pricing on Residential Developments. Final Report: <a href="http://www.utrc2.org/publications/final-toll-pricing">http://www.utrc2.org/publications/final-toll-pricing</a>	UTRC
Dr. Daniel B. Hess	State University of New York (SUNY)	Energy Savings from Transit Passes: An Evaluation of the University at Buffalo NFTA Transit Pass Program for Students, Faculty, and Staff. Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final-NFTA-Transit-Pass.pdf">http://www.utrc2.org/sites/default/files/pubs/Final-NFTA-Transit-Pass.pdf</a>	UTRC
Dr. Dawit Negussey	Syracuse University	Investigation of the Carrs Creek Geofoam Project. Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final-Carrs-Creek-Geofoam_0.pdf">http://www.utrc2.org/sites/default/files/pubs/Final-Carrs-Creek-Geofoam_0.pdf</a>	UTRC
Dr. Elena Prassas	Polytechnic Institute of NYU	Relating the 2010 Signalized Intersection Methodology to Alternate Approaches in the Context of NYC Conditions Final Report: <a href="http://www.utrc2.org/publications/final-signalized-intersection-methodology">http://www.utrc2.org/publications/final-signalized-intersection-methodology</a>	UTRC
Dr. Hangson Tang Dr. Steven I-Jy Chien	CCNY/CUNY New Jersey Institute of Technology	Vulnerability of Transportation System and Evacuation Plan for Coastal Flooding in Climate Change Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Vulnerability-of-Transportation-System-and-Evacuation-Plan.pdf">http://www.utrc2.org/sites/default/files/pubs/Vulnerability-of-Transportation-System-and-Evacuation-Plan.pdf</a>	UTRC
Dr. Hansong Tang	CCNY/CUNY	Potential Tidal Power for New Jersey Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/final-tidal-energy.pdf">http://www.utrc2.org/sites/default/files/pubs/final-tidal-energy.pdf</a>	NJDOT & UTRC
Dr. Ivette Cruzado Vélez	University of Puerto Rico -Mayagüez	Speed And Design Consistency Of Combined Horizontal And Vertical Alignments In Two lane Rural Roads Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final%20Report-Two-Lane-Rural-Roads.pdf">http://www.utrc2.org/sites/default/files/pubs/Final%20Report-Two-Lane-Rural-Roads.pdf</a>	UTRC
Dr. John Bullough & Dr. Mark Rea	Rensselaer Polytechnic Institute	Leveraging Brightness from Transportation Lighting Systems through Light Source Color: Implications for Energy Use and Safety for Traffic and Pedestrians Final Report: <a href="http://www.utrc2.org/publications/final-leveraging-brightness-light-source-color">http://www.utrc2.org/publications/final-leveraging-brightness-light-source-color</a>	UTRC

## COMPLETED PROJECTS

PI(s)	Institution(s)	Project Title	Sponsor(s)
Dr. John C Falcocchio & Dr. Elena Prassas	Polytechnic Institute of NYU	Traveler Oriented Traffic Performance Metrics Using Real Time Traffic Data from the Midtownin- Motion (MIM) Project in Manhattan, NY Final Report: <a href="http://www.utrc2.org/publications/final-traffic-performance-metrics">http://www.utrc2.org/publications/final-traffic-performance-metrics</a>	UTRC
Dr. Joseph Berechman	City University of New York	The Politics of Large Infrastructure Investment Decision-Making: The Case of the Second Avenue Subway Case Study Final Report: <a href="http://www.utrc2.org/publications/final-second-avenue-subway-case">http://www.utrc2.org/publications/final-second-avenue-subway-case</a>	UTRC
Dr. Kaan Ozbay* & Dr. Hani Nassif	Rutgers University	Data Driven Performance Measures for Effective Management of Complex Transportation Networks Final Report: <a href="http://www.utrc2.org/publications/final-data-driven-performance-measures">http://www.utrc2.org/publications/final-data-driven-performance-measures</a>	UTRC
Dr. Lei Zuo	State University of New York (SUNY)	Energy Harvesting from Rail Track for Transportation Safety and Monitoring Final Report: <a href="http://www.utrc2.org/publications/final-energy-harvesting-rail-track">http://www.utrc2.org/publications/final-energy-harvesting-rail-track</a>	UTRC
Dr. Lisa B. Axe	New Jersey Institute of Technology	Field Methods for Determining Lead Content in Bridge Paint Removal Waste Final Report: <a href="http://www.utrc2.org/research/projects/lead-content-bridge-paint-removal-waste">http://www.utrc2.org/research/projects/lead-content-bridge-paint-removal-waste</a>	NYSDOT
Dr. Mark Rea, Dr. John Bullough	LRC/RPI	Nighttime Highway Construction Illumination Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final-Highway-Construction-Illumination.pdf">http://www.utrc2.org/sites/default/files/pubs/Final-Highway-Construction-Illumination.pdf</a>	NYSDOT & UTRC
Dr. Mitchell L. Moss Sarah Kaufman	New York University	Use of Web-Based Rider Input for Transit Management in the New York City Region Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final-co-monitoring-transit-management.pdf">http://www.utrc2.org/sites/default/files/pubs/Final-co-monitoring-transit-management.pdf</a>	UTRC
Dr. Rae Zimmerman	New York University	Promoting Transportation Flexibility In Extreme Events Through Multi-Modal Connectivity Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final-NYU-Extreme-Events-Research-Report.pdf">http://www.utrc2.org/sites/default/files/pubs/Final-NYU-Extreme-Events-Research-Report.pdf</a>	UTRC
Dr. Raimondo Betti	Columbia University	Finite Element Model Updating and Damage Detection for Bridges Using Vibration Measurements Final Report: <a href="http://www.utrc2.org/publications/final-finite-element-model">http://www.utrc2.org/publications/final-finite-element-model</a>	UTRC
Dr. Robert B. Noland	Rutgers University	Planning Level Assessment of Greenhouse Gas Emissions for Alternative Transportation Construction Projects Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final-GASCAP-PhaseII.pdf">http://www.utrc2.org/sites/default/files/pubs/Final-GASCAP-PhaseII.pdf</a>	UTRC
Dr. Robert Miskewitz & Dr. Christopher G. Uchirin	Rutgers University	Landfill Closure With Dredged Materials - Desktop Analysis Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final-Landfill-Closure.pdf">http://www.utrc2.org/sites/default/files/pubs/Final-Landfill-Closure.pdf</a>	NJDOT& UTRC
Dr. Shmuel Yahalom, Dr. Kaan Ozbay	State University of New York (SUNY), Rutgers University	Offshore Wind Development Research Final report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final-Offshore-Wind-Development.pdf">http://www.utrc2.org/sites/default/files/pubs/Final-Offshore-Wind-Development.pdf</a>	NJDOT& UTRC

## COMPLETED PROJECTS

PI(s)	Institution(s)	Project Title	Sponsor(s)
Dr. Thomas Bennert	Rutgers University	Grade Determination of Crumb Rubber-Modified Performance Graded Asphalt Binder Final Report: <a href="http://www.utrc2.org/publications/final-graded-asphalt-binder">http://www.utrc2.org/publications/final-graded-asphalt-binder</a>	NJDOT & UTRC
Dr. Thomas H. Wakeman III & Dr. Jon Miller	Stevens Institute of Technology	Lessons from Hurricane Sandy for Port Resilience Final Report: <a href="http://www.utrc2.org/publications/hurricane-sandy-port-resilience">http://www.utrc2.org/publications/hurricane-sandy-port-resilience</a>	UTRC
Dr. Xiaokun (Cara) Wang	Rensselaer Polytechnic Institute	Traffic Volume Estimation using Network Interpolation Techniques Final Report: <a href="http://www.utrc2.org/publications/final-traffic-volume-interpolation">http://www.utrc2.org/publications/final-traffic-volume-interpolation</a>	UTRC
Dr. Xiaokun (Cara) Wang	Rensselaer Polytechnic Institute	Conduct Urban Agglomeration with the Baton of Transportation Final Report: <a href="http://www.utrc2.org/publications/final-urban-agglomeration">http://www.utrc2.org/publications/final-urban-agglomeration</a>	UTRC
Dr. Xiaokun (Cara) Wang, Dr. Alison Conway, and Dr. Camille Kamga	Rensselaer Polytechnic Institute & The City College of New York	Evaluation of the Cooperative Multi-Carrier Delivery Initiatives Final Report: <a href="http://www.utrc2.org/publications/final-cooperative-multi-carrier-delivery">http://www.utrc2.org/publications/final-cooperative-multi-carrier-delivery</a>	UTRC
Dr. Xuegang (Jeff) Ban, Dr. Camille Kamga, and Dr. Xiaokun (Cara) Wang	RPI, CUNY	Adaptive Traffic Signal Control System (Acs Lite) For Wolf Road, Albany, New York Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final-Adaptive-Traffic-Signal-Wolf-Road.pdf">http://www.utrc2.org/sites/default/files/pubs/Final-Adaptive-Traffic-Signal-Wolf-Road.pdf</a>	NYSDOT & UTRC
Dr. Yusuf A. Mehta	Rowan University	Correlation between Multiple Stress Creep Recovery (MSCR) Results and Polymer Modification of Binder Final Report: <a href="http://www.utrc2.org/publications/final-MSCR-polymer-modification">http://www.utrc2.org/publications/final-MSCR-polymer-modification</a>	NJDOT & UTRC
Dr. Yusuf A. Mehta	Rowan University	Characterization of Fatigue Properties of Binders and Mastics at Intermediate Temperatures using Dynamic Shear Rheometer Final Report: <a href="http://www.utrc2.org/publications/final-MSCR-polymer-modification">http://www.utrc2.org/publications/final-MSCR-polymer-modification</a>	UTRC
Dr. Yusuf A. Mehta	Rowan University	Determine Viscoelastic Mechanical Properties of Warm Mix Asphalt (WMA)-Reclaimed Asphalt Pavement (RAP) Mixes under High Stresses in Airfield Flexible Pavements and Its Impact on Design Life Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final-Viscoelastic-Properties-Warm-Mix-Asphalt.pdf">http://www.utrc2.org/sites/default/files/pubs/Final-Viscoelastic-Properties-Warm-Mix-Asphalt.pdf</a>	UTRC
Dr. Huiming Yin	Columbia University	Air Quality Impact of Traffic Congestion in Midtown Manhattan Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final-Air-Quality-Impact-Midtown-Manhattan_1.pdf">http://www.utrc2.org/sites/default/files/pubs/Final-Air-Quality-Impact-Midtown-Manhattan_1.pdf</a>	UTRC
Michael O'Rourke and Chris Letchford	Rensselaer Polytechnic Institute	Full-Scale Investigation Of Wind-Induced Vibrations Of Mast-Arm Traffic Signal Structures Final Report: <a href="http://www.utrc2.org/sites/default/files/pubs/Final-Mast-Arm-Traffic-Signal%20%282%29.pdf">http://www.utrc2.org/sites/default/files/pubs/Final-Mast-Arm-Traffic-Signal%20%282%29.pdf</a>	NYSDOT & UTRC

# FEATURED COMPLETED PROJECTS AT UTRC IN THE YEAR 2014

## INVESTIGATION OF THE CARRS CREEK GEOFOAM PROJECT

### Principal Investigator(s):

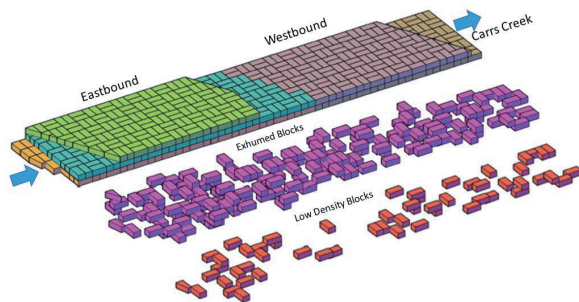
Dr. Dawit Negussey

### Institution(s):

Syracuse University

### Sponsor(s):

University Transportation Research Center (UTRC)



as the target date for rapid construction and reopening of I88.

This report presents background on the failure of a rapid re-construction of the I88 culvert crossing of Carrs Creek that collapsed in 2006 and the investigation of the failed re-construction that followed (1). Field information, test results and conclusions presented in the previous report are re-examined. This investigation includes re-assessment of the field data, review of test results and attributed causes for the failure through computer modeling and alternative laboratory tests to reach different conclusions. Lessons learned from the failure and insights gained from the investigation are used to provide an alternative design. Suggestions to improve rapid construction practice with geofam are provided.

### Final Report:

[http://www.utrc2.org/sites/default/files/pubs/Final-Carrs-Creek-Geofam\\_0.pdf](http://www.utrc2.org/sites/default/files/pubs/Final-Carrs-Creek-Geofam_0.pdf)

The I88 culvert at Carrs Creek in Sidney, NY; collapsed during the record Mid-Atlantic States Flood in June 2006 (2). The failure is about 56km (35 miles) northeast of Binghamton (Figure 1). The 9.1m (30ft) wide corrugated metal plate culvert was built in 1974 and had received a rating of 5 out of 7 in the bi-annual NYSDOT survey of 2004. The rating of 5 represents minor deterioration but was otherwise of acceptable structural and functional grade (3). By the early morning of June 28, the Carrs Creek flood stage rose above the inlet and the culvert collapsed (Fig 2). A truck heading east and another traveling west fell into the wide trench formed by the culvert failure and washout of the roadway. Both drivers lost their lives. The I88 section between Sidney and Unadilla, NY was closed. Delaware County was declared a Federal Disaster Area. Labor Day 2006 was established

## NIGHTTIME HIGHWAY CONSTRUCTION ILLUMINATION

### Principal Investigator(s):

Dr. Mark Rea and Dr. John Bullough

### Institution(s):

Rensselaer Polytechnic Institute

### Sponsor(s):

New York State Department of Transportation (NYSDOT) and University Transportation Research Center (UTRC)

The nighttime driving environment, consisting of roadway illumination, signs, vehicle lighting and markers, delineators and flashing lights, can be complex or even confusing for both pedestrians and drivers. The nighttime construction environment is even more complex and even chaotic because of the added presence of workers, construction equipment and bright lights (which are sometimes flashing). Work zones at night often involve changing conditions and new traffic patterns that are unfamiliar to drivers. Workers in highway construction areas and drivers navigating through these areas have distinct visual requirements that must be met both through lighting and other forms of visual information provided in the work zone. Conventional methods for illuminating work zones are prone to producing glare for workers and for drivers. At the same time, new technologies for lighting and traffic control, such as balloon lights, light emitting diodes (LEDs), highly reflective retroreflective sheeting and intelligent warning lights are being developed that could address many of the concerns associated with nighttime highway construction. As part of a multi-phase project, requirements for worker and driver visibility and visual information were identified through human factors research, and various technologies and new approaches to work zone lighting and traffic control were demonstrated and evaluated to provide preliminary guidance for when they might be of benefit. A checklist of planning and design issues, and a method for estimating visual performance under nighttime work zone lighting are provided to help transportation engineers and highway contractors identify promising solutions for work zone lighting.

Final Report: <http://www.utrc2.org/sites/default/files/pubs/Final-Highway-Construction-Illumination.pdf>

## USE OF WEB-BASED RIDER INPUT FOR TRANSIT MANAGEMENT IN THE NEW YORK CITY REGION

### Principal Investigator(s):

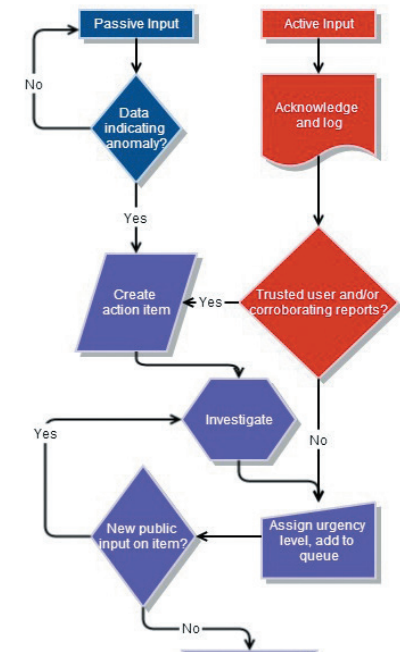
Dr. Mitchell L. Moss and Sarah Kaufman

### Institution(s):

New York University

### Sponsor(s):

University Transportation Research Center (UTRC)



This research considers current rider reporting systems and proposes a co-monitoring system framework. Emerging technologies offer transit agencies an opportunity to transform fundamental aspects of their operations and the way they communicate with their rid-

ers. With nearly ubiquitous smartphones and social media tools among growing ridership patterns, transit providers can use aggregate mobile phone data and social media posts to improve system management.

Data-based reports can reach the operations center faster than field personnel, with mobile phone networks indicating station crowding or a passenger posting a photo of another pulling the emergency brake. Exceeding traditional reporting mechanisms (exclusive information from personnel) would save time and lower the costs of field monitoring while raising the trust between transit agencies and their customers.

Public feedback mechanisms are growing both within and tangentially to government services, allowing users to collaborate on planning projects, report on quality-of-life issues, and crowd-fund local initiatives. While transit agencies historically rely on periodic rider surveys, this method of data collection is outdated and often inaccurate when compared to real-time social media posts.

By employing “co-monitoring” - the monitoring of field conditions through a combination of staff reports, data analysis and public observations – transit agencies will save time and costs for information gathering, improve their responsiveness, and establish working partnerships between the agencies and their customers. This report proposes a framework for a co-monitoring system, and discusses the expected benefits and challenges, as well as policy recommendations for agencies pursuing co-monitoring systems. Keys to successful comonitoring systems are agency openness to new streams of data and respectful dialogue from both management and riders. Well-designed comonitoring tools will put transit on track to manage smarter, more versatile transit systems for the twenty-first century.

Final Report: <http://www.utrc2.org/sites/default/files/pubs/Final-co-monitoring-transit-management.pdf>

## OFFSHORE WIND DEVELOPMENT RESEARCH

### Principal Investigator(s):

Dr. Shmuel Yahalom and Dr. Kaan Ozbay\*

### Institution(s):

State University of New York (SUNY) Rutgers University

### Sponsor(s):

New Jersey Department of Transportation (NJDOT) and University Transportation Research Center (UTRC)

*\*Dr. Kaan Ozbay is now a professor at NYU Polytechnic School of Engineering*

Offshore wind (OSW) development is a new undertaking in the US. This project is a response to New Jersey’s 2011 Energy Master Plan that envisions procuring 22.5% of the state’s power originating from renewable sources by 2021. The Offshore Wind Economic Development Act called for at least 1,100 MW of Offshore Wind generations to be subsidized by an Offshore Wind Renewable Energy Certificate program. The overarching goal of this research is to provide information and recommendations for the maritime aspects, both vessel and port interface. The study, using the European experience, identifies vessel types, vessel installation methods, needs and operating characteristics through all phases of OSW development. It also identifies regulatory or legislative requirements and/or other road blocks to the use of particular vessels. The study seeks competitive advantages and disadvantages of vessel acquisition, lease, construction or other alternatives. The study proposes solutions and recommendations that best position the State of New Jersey to be the national leader in OSW development, including potential interstate or cooperative endeavors. Financial aspects and considerations of vessel acquisition

are presented. The research also proposes a port/OSW industry interface strategy for short-, mid-, and long-term industry development. In general, the study identifies the maritime port life-cycle requirements for installation, construction, operation and maintenance based on geographic factors, and the potential for multi-use development at New Jersey’s East Coast ports. Finally, the study highlights the economic impact of OSW development on the state population and the energy-generating industry. The study recommends the development of a clear OSW policy with a commitment of budgets and in partnerships with industry and other stakeholders.

Final Report: <http://www.utrc2.org/sites/default/files/pubs/Final-Offshore-Wind-Development.pdf>

## LESSONS FROM HURRICANE SANDY FOR PORT RESILIENCE

### Principal Investigator(s):

Dr. Thomas H. Wakeman III and Dr. Jon Miller

### Institution(s):

Stevens Institute of Technology

### Sponsor(s):

University Transportation Research Center (UTRC)

New York Harbor was directly in the path of the most damaging part of Hurricane Sandy causing significant impact on many of the facilities of the Port of New York and New Jersey. The U.S. Coast Guard closed the entire Port to all traffic before the storm hit on October 28th. It was not fully reopened to vessel traffic until November 4th. Then, even though the waterways were open, numerous port terminals and maritime facilities did not resume their operations for several more weeks because of power failures and damages to the facilities and equipment. This study was conducted to

identify lessons learned that could assist in restoring the Port and its contributions to the supply chain to service more rapidly in the future. The study used interviews of key port stakeholders to gather information, to understand events, and to identify the circumstances that led to the Port’s storm-related impacts and operational recovery. The project reviewed the existing design codes for infrastructure and attempted to identify how building codes could be improved. It also examine the activities and processes that enhanced port resiliency. There were several generalized principles that emerged from the interviews. They included: (1) Safety of life is the prime consideration. (2) Make plans before hand to provide leadership across organizations with strong and redundant communication systems between the leadership team and the staff. (3) The current designs and procedures must be re-evaluated given the frequency of storms. (4) Conduct drills and tabletop exercises. Most of the major damage within the port was related to the inundation associated with the storm surge plus a high tide. Storms capable of having similar impacts will occur in the future. The following building code recommendations are suggested: (1) The building codes of New York and New Jersey should be updated to include port specific sections that are uniform for the entire harbor region. (2) Specifically the states should adopt ASCE 24 for siting of critical utility and mechanical equipment and directly reference it for flood resistant design for all port facilities. (3) The Port Authority should add a section to their lease agreements devoted to port specific structural considerations. (4) The facility owners in the Port of New York and New Jersey should adopt a reasonable and consistent methodology for incorporating sea level rise into their facility upgrades. Merging resiliency principles from the literature and the descriptions by stakeholders, a simple stepwise process was formulated for enhancing port resiliency. There are activities that can take place prior to a disruption (i.e., pre-event) or they can take

place following the occurrence of an incident (post-event).

Final Report: <http://www.utrc2.org/publications/hurricane-sandy-port-resilience>

## ADAPTIVE TRAFFIC SIGNAL CONTROL SYSTEM (ACS LITE) FOR WOLF ROAD, ALBANY, NEW YORK

### Principal Investigator(s):

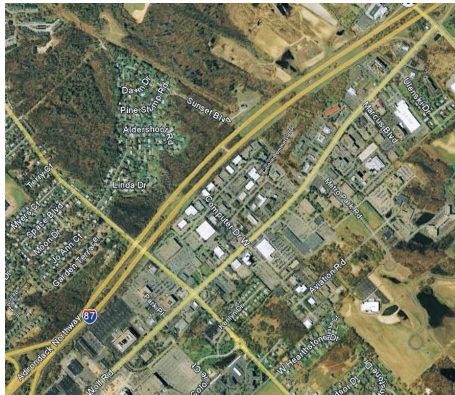
Dr. Xuegang (Jeff) Ban, Dr. Camille Kamga, and Dr. Xiaokun (Cara) Wang

### Institution(s):

Rensselaer Polytechnic Institute, City University of New York

### Sponsor(s):

New York State Department of Transportation (NYSDOT) and University Transportation Research Center (UTRC)



Adaptive Control Software Lite (ACS-Lite) is a traffic signal timing optimization system that dynamically adjusts traffic signal timings to meet current traffic demands. The purpose of this research project was to deploy and evaluate the ACS-Lite adap-

tive traffic control system on a congested urban corridor in New York State (NYS). In this case, the Wolf Road Corridor in Albany, New York, was chosen. The primary goal was to document the experiences and key lessons learned from the deployment and evaluation regarding how an adaptive control system can be deployed, the advantages and disadvantages of the system, and whether it is suitable for use in other corridors in NYS. The results of the project showed that for heavily congested corridors adaptive control can improve flow within its own system, but may cause extra delays at the boundaries where there are interactions with other traffic control systems. Therefore, a more comprehensive control/management framework may be needed in some cases. The specific ACS-Lite software also needed to be upgraded and improved in order to work for the selected corridor, which caused delays to this project.

Final Report: <http://www.utrc2.org/sites/default/files/pubs/Final-Adaptive-Traffic-Signal-Wolf-Road.pdf>

## ENERGY SAVINGS FROM TRANSIT PASSES: AN EVALUATION OF THE UNIVERSITY AT BUFFALO NFTA TRANSIT PASS PROGRAM FOR STUDENTS, FACULTY, AND STAFF

### Principal Investigator(s):

Dr. Daniel B. Hess

### Institution(s):

State University of New York (SUNY)

### Sponsor(s):

University Transportation Research Center (UTRC)

The University Transportation Research Center – Region 2 supported a study entitled “Connections Beyond Campus: An Evaluation of the Niagara Frontier Transportation Authority – University at Buffalo Transit Pass Program”. Unlimited Access transit passes have become common sustainability programming at many colleges and universities in cities both large and small across the United States. In 2010, the University at Buffalo (UB), in partnership with the Niagara Frontier Transportation Authority (NFTA), established a pilot program to provide select students, faculty, and staff with unlimited prepaid use of the NFTA Metro Rail, a 6.2 mile light-rail rapid transit system which connects Downtown Buffalo and UB’s South Campus and the neighborhoods between the two. Though other colleges and universities in Buffalo have been providing transit passes to students at their institutions since 2003, this was the first time in which the UB, the region’s largest institution of higher education with 28,600 students, entered into a transit pass agreement with the NFTA.

The UB-NFTA Pilot Transit Pass Program concluded after 20 months at the end of the summer 2012 session. Overall, 1,923 students and 300 faculty and staff took part in the program. As the program concluded, it was not officially evaluated by UB. This report seeks to evaluate the effectiveness of the program in a number of focus areas, including the cost of the program to the parties involved, and also the benefits obtained both by the participating organizations and by individual transit pass users. This is accomplished through the use of both qualitative and quantitative analysis of the results of a university-wide survey conducted by the research team in April 2013.

The analysis of this project revealed many expected and unexpected results. Some users of the transit pass were new Metro Rail riders, and some previously paid their

own fares. The UB-NFTA transit pass was underpriced, which benefited UB and led to lost revenue for the NFTA throughout the course of the program. The program allowed 72 survey respondents to cease owning a vehicle, and 179 respondents to delay owning a vehicle, effectively reducing the cost of a UB education by thousands of dollars a year for participants who could utilize Metro Rail to commute to campus in place of an automobile. The UB-NFTA Pilot Transit Pass Program increased transportation choices and for the first time provided university community members a transportation subsidy which did not take the form of a parking space. UB officials have stated, however, that the intent of the UB-NFTA transit pass program was to provide a link between the South and Downtown campuses, and was not to serve as a commute subsidy.

Final Report: <http://www.utrc2.org/sites/default/files/pubs/Final-NFTA-Transit-Pass.pdf>

## THE POLITICS OF LARGE INFRASTRUCTURE INVESTMENT DECISION-MAKING: THE CASE OF THE SECOND AVENUE SUBWAY CASE STUDY

### Principal Investigator(s):

Dr. Joseph Berechman and Dr. Patrizia Nobbe

### Institution(s):

City University of New York

### Sponsor(s):

New York State Department of Transportation (NYSDOT) and University Transportation Research Center (UTRC)



Over the past few decades, urbanization and economic growth have intensified the need for more efficient urban and regional transportation, including the expansion and

reorganization of existing transportation networks. Given such huge investments and severe constraints on resources such as financial and land, infrastructure projects require a careful prioritization and selection among available alternatives. In reality, project selection appears to be determined as much by politics as by transport-economic considerations. This paper traces the politics of megaproject decision-making of the Second Avenue Subway (SAS), a subway project in New York. The project's first stage is currently being built after nearly 100 years of effort. In particular, the authors examine whether project-related decisions were the results of power struggles between the involved actors, and less the results of transportation planning concerns. They argue that the re-organization of transportation institutions, specifically the formation of the Metropolitan Transportation Agency (MTA), enabled the selection and implementation of SAS. While transportation agencies are bound by the legal and bureaucratic rules set by those who create them, they have their own agendas and are crucial for project selection. If successful, as in the case of the Second Avenue Subway, they can establish political momentum against political and fiscal adversity. Against the background of this project's long planning and failure history, we find that besides the creation of the MTA, the following factors contributed to the project's eventual success: 1) the long project history bestowed a "legendary" character upon the project; 2) a "window of opportunity" opened up for inner-city projects after September 11; 3) a strong set of project champions advanced the project; and 4) the nature of funding arrangements was instrumental to this project's success.

Final Report: <http://www.utrc2.org/publications/final-second-avenue-subway-case>

## TRAVELER ORIENTED TRAFFIC PERFORMANCE METRICS USING REAL TIME TRAFFIC DATA FROM THE MIDTOWN IN-MOTION (MIM) PROJECT IN MANHATTAN, NY

### Principal Investigator(s):

Dr. John C Falcocchio and Dr. Elena Prassas

### Institution(s):

New York University

### Sponsor(s):

University Transportation Research Center (UTRC)

New York City Department of Transportation (NYCDOT) has been upgrading its Intelligent Transportation Systems (ITS) infrastructure. Specifically NYCDOT has been installing Advanced Solid State Traffic Controllers (ASTC), a city wide wireless network (NYCWiN), and a sophisticated Traffic Control System (TCS) in the Traffic Management Center (TMC). Capitalizing on the deployment of these new technologies, NYCDOT instituted the "Midtown in Motion" (MIM) project to enhance mobility in the Midtown Core of Manhattan in a 110 square block area of "box" from 2nd to 6th Avenues, 42nd to 57th Streets. MIM was announced by Mayor Michael Bloomberg on July 18, 2011. The project uses adaptive signal control systems. Adaptive control is generally characterized by adjusting the signal timing in response to changes in traffic using real-time data.

The MIM project utilizes "active traffic management" (ATM) and the full capabilities of the NYCDOT ITS infrastructure. The signal-timing measures applied by MIM complement other efforts by the City to improve traffic operations. As part of this project E-ZPass tag readers were installed to provide

travel time data, and microwave sensors were deployed to provide flow/occupancy data, both in real time. The ATM is based on a two-level control strategy to improve mobility using both travel time and flow/occupancy data. The real time data are being archived by NYCDOT and supplement other data warehouse including counts, volumes, and speeds, etc., which are collected as part of the DOT and other agency projects.

Final Report: <http://www.utrc2.org/publications/final-traffic-performance-metrics>

## SPEED AND DESIGN CONSISTENCY OF COMBINED HORIZONTAL AND VERTICAL ALIGNMENTS IN TWO LANE RURAL ROADS

### Principal Investigator(s):

Dr. Alberto M. Figueroa Medina, Dr. Ivette Cruzado Vélez, Dr. Christopher M. Papadopoulos, Dr. Didier M. Valdes-Diaz

### Institution(s):

University of Puerto Rico - Mayagüez

### Sponsor(s):

University Transportation Research Center (UTRC)

One of the most important equations in highway design is the formula for the minimum radius of horizontal curve which considers the design speed of the highway, the superelevation, and the side friction factor. Traditionally, differences in the highway vertical alignment features, which are prevalent at areas with rolling and mountainous terrains, are not considered in this part of the design process. Past research has indicated that drivers perceive horizontal curves differently when compared with highway







# TECHNOLOGY TRANSFER



**UTRC's** *Technology Transfer program goes beyond what might be considered traditional.*

UTRC's Technology Transfer Program goes beyond what might be considered "traditional" technology transfer activities. Its main objectives are (1) to increase the awareness and level of information concerning transportation issues facing Region 2; (2) to improve the knowledge base and approach to problem solving of the region's transportation workforce, from those operating the systems to those at the most senior level of managing the system; and by doing so, to improve the overall professional capability of the transportation workforce; (3) to stimulate discussion and debate concerning the integration of new technologies into our culture, our work and our transportation systems; (4) to provide the more traditional but extremely important job of disseminating research and project reports, studies, analysis and use of tools to the education, research and practicing community both nationally and internationally; and (5) to provide unbiased information and testimony to decision-makers concerning regional transportation issues consistent with the UTRC theme.

# UTRC EVENTS

## UTRC HOSTED A PRESENTATION ON URBAN CONNECTED MOBILITY

FOLLOWED BY A PANEL DISCUSSION

DECEMBER 16, 2014 AT NYIT



From L to R:  
**Camille Kamga,**  
UTRC Director;

**Larry Yermack,**  
Strategic Advisor at Cubic  
Transportation Systems;

**Robert E. Paaswell,**  
UTRC Director Emeritus;

**Candace Brakewood,**  
Assistant Professor at CCNY;

**Matthew W. Daus,**  
UTRC Distinguished Lecturer;

**Richard Hanley,**  
Professor at New York City College of Technology

UTRC hosted a presentation on December 16, 2014 at the New York Institute of Technology followed by a panel discussion. The presentation speaker was Larry Yermack, a strategic advisor to Cubic Transportation Systems. The panel members included; Richard Hanley (Moderator), Professor at New York City College of Technology, CUNY; Matthew Daus, UTRC Distinguished lecturer; and Candace Brakewood, Assistant Professor at the City College of New York, CUNY.

In his presentation, Larry mentioned that urban transportation systems are being challenged by the multiplicity of providers and complexity of the journey. He presented that it has gotten a lot more complicated to get around major cities and that we are seeing attempts to address these problems by public providers as well as App developers. However, Larry believes that so far, they all fall short of solving the problem. He talked about the vision of connected urban mobility that addresses the problems and is within our grasp. His presentation enabled the

audience to imagine the ability to use a phone to plan a journey, check schedules, receive real-time incident data, pay for all of the segments and then receive a single monthly bill for all paid transportation used.

Operators will have ready access to travel patterns giving them the ability to modify service. We can explore what a seamless trip would mean to the individual travel experience, the opportunities for regional cooperation and service integration that this approach has to offer.

*“Cubic Transportation Systems has developed the platforms necessary to deploy a universal transportation account, which would provide benefits to travelers as well as operators. Beyond the real operational improvements, it becomes the most powerful traffic demand management tool yet developed”.*

The presentation and panel discussion were videotaped and are available on the UTRC’s website.

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

## UTRC WORKSHOP WITH JAPANESE CIVIL ENGINEERING PROFESSORS

DECEMBER 4TH, 2014 AT CCNY



From L to R: *Kyriacos Mouskos, CCNY; Penny Eickemeyer, UTRC; Wisinee Wisetjindawat, Nagoya Institute of Technology; Koji Noda, Toyota Technological Institute in Nagoya; Jun Sakamoto, National Institute of Technology, Gifu College; Motohiro Fujita, Nagoya Institute of Technology; Camille Kamga, UTRC/CCNY*

Several UTRC faculty collaborated with civil engineering professors from Japan on December 4, 2014 for a workshop related to traffic congestion and goods distribution after disasters. Jun Sakamoto from Japan's National Institute of Technology, Gifu College, who is spending the year at Queens College-CUNY, reached out to UTRC through Queens College colleagues, Mindy Rhindress, Adjunct Professor of Sociology, and Andy Beveridge, Professor of Sociology, who had previous connections with UTRC. Dr. Sakamoto and three of his colleagues in Japan were interested in presenting their research and exchanging ideas with UTRC researchers with similar interests. The topics presented during this program included:

- Analysis of traffic animated simulation during downpour disasters using probe car data with GIS application, Motohiro Fujita, Ph.D., Nagoya Institute of Technology. Dr. Fujita's presentation discussed an analysis of traffic congestion after a typhoon hit in

Japan on September 20, 2011 that caused severe damage to Nagoya's and Tajimi's traffic networks, including public transport, and highlighted the problem that traffic measures to prevent traffic confusion under downpours were not yet sufficient. In this research, an animated simulation was developed by using GPS car data (probe data) on the road network with a GIS application in order to visualize and interpret heavy traffic jams that resulted. The simulation was able to demonstrate road traffic confusion under a downpour disaster and showed several weak points in the urban traffic network, enabling traffic mitigation measures against future disasters to be examined.

- Planning of goods distribution in earthquake aftermath, Wisinee Wisetjindawat, Ph.D., Nagoya Institute of Technology. Dr. Wisetjindawat's research focused on issues with goods distribution after disasters by examining the situation after a 9.0 (Mw) earthquake and Tsunami occurred in Japan

on March 11th, 2011, affecting a vast area of northeastern Japan. This research investigated the uncertainty of individual links in the logistics system becoming unusable and the resulting effect on the entire logistics system. The analysis indicated that consideration must be given in advance to the likelihood of the road network being disrupted at different intensity levels, the potential recovery strategy on different road classes, and the resulting impacts on logistic operations. It was recommended that this type of analysis could be beneficial in developing preparations for coping with the unavoidable uncertainties that do arise in these circumstances.

- Possibility of black-spot identification based on probe car data, Jun Sakamoto, Ph.D., National Institute of Technology, Gifu College. Using GPS sensors, this research analyzed parameters of vehicles, such as speed and position, and studied sudden braking data. This information allowed for the identification of hot spots or locations of recurring accidents. The researchers examined a 3.2km stretch of road in the Gifu Prefecture in Japan. Through various modeling techniques, the research was able to estimate traffic accidents and therefore identify black-spot locations based on analysis of sudden braking and road situations. Another Japanese professor, Koji Noda, Ph.D. of the Toyota Technological Institute in Nagoya also participated in the workshop. In addition, a presentation was given by UTRC professor Thomas Wakeman. His topic was:

- Cooperation and Collaboration of Land-based Logistics Teams to Enhance Supply Chain Resilience, Thomas Wakeman, Ph.D., Professor, Stevens Institute of Technology. This research developed guidelines using lessons learned during Hurricane Sandy to aid decision-making to reduce the impact of a flood event. Hurricane Sandy and other recent storms on the Eastern seaboard, combined with future trends of sea-level rise and storm severity, have demonstrated that reducing the impact of port flooding is an economic necessity. Current policies and practices are successful in restoring water-side marine operations – landside operations are less successful. Guidelines, including the establishment of a Logistics Team, are proposed to help facilitate the recovery of terminals, intermodal connections, and address local flood mitigation for supply chains needing to restore normal business processes after an event. The guidelines describe possible methods of restoring normal port supply chain operations through cooperative practices. When ports throughout the country use the recommended collaborative principles, they work to overcome the normal competitive nature associated with the maritime industry and can assist one another during periods of distress. The routine application of the guidelines would help create more resilient ports and logistic practices, further enhancing regional and national economic resilience.

## UTRC AND BWRC HOSTED A HALF-DAY SYMPOSIUM ON “HAS THE BROOKLYN WATERFRONT GONE GLOBAL - AGAIN?”

MARCH 21, 2014 AT BROOKLYN BOROUGH HALL



Christopher Tepper, Jamestown Properties (Industry City)



Mark Levinson, author of the award-winning book: “The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger, Richard Hanley, City Tech (Right)



John J. Liantonio, PANY/NJ



Mary Habstritt, President and Founder of the Historic Ships Coalition

Photos by Eva Zelarayan, courtesy of CityTech's Facility Commons

University Transportation Research Center and Brooklyn Waterfront Research Center hosted a half day symposium on March 21st, 2014 at the Brooklyn Borough Hall. The symposium addressed the history of the Brooklyn in the context of the Brooklyn waterfront's rich industrial history and how and why that industry disappeared. In the past the Brooklyn waterfront has played an important role on the global stage. In the early 19th century it was a processing destination for raw commodities such as sugar, coffee, and tobacco with complicity in the global slave trade. In the early 20th century, it became an indus-

trial center for manufacturing, warehousing and export distribution. Then, in the 1960s, it suffered a huge decline in jobs, economic vitality, and global reach. Today there has been rejuvenation but the commerce that has returned to the waterfront is different yet again.

- Are these new jobs once again placing Brooklyn on the global stage? How?
- In what ways is the Brooklyn waterfront having a global reach?
- How is that global reach similar and different from what it once was?

## UTRC VISITING SCHOLAR SEMINAR: REBECCA REYES-ALICEA FROM FRA PRESENTING ON “FUTURE RAIL INVESTMENTS PLANNED FOR THE NORTHEAST CORRIDOR”

MARCH 29, 2014 AT NYIT



eight states and is served by commuter, intercity and freight railroads, and the steps NEC FUTURE is taking to develop a long-range investment program.

She also mentioned that the population and employment in the Northeast is expected to grow some 25-35 percent over the next 25 years, bringing the prospect of economic prosperity and the reality of even more traffic and congestion. The Washington-Boston Northeast Corridor rail line already carries a significant portion of the region's travelers to and from work and other destinations. Its ability to absorb the crush of new travelers in the coming decades, and to support the region's economic development, will require a significant investment to grow capacity, improve reliability and serve new markets. The Federal Railroad Administration (FRA), an agency within the U.S. Department of Transportation, is leading development of



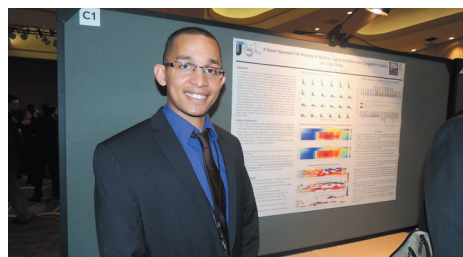
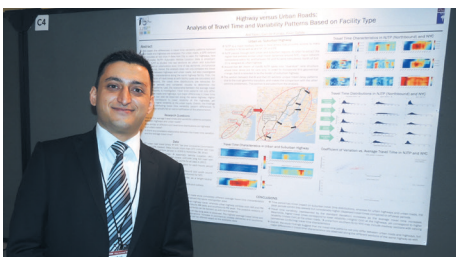
UTRC hosted a visiting scholar seminar on March 28, 2014 featuring Rebecca Reyes-Alicea, FRA's program manager for NEC FUTURE. Rebecca presented on the topic of Future Rail Investments Planned for the Northeast Corridor. The event was very well attended and generate a lot of audience interest. In her presentation, she described the nature of the planning process, the challenges in working on a corridor that crosses

a Passenger Rail Corridor Investment Plan – called NEC FUTURE – to define the investment required to keep the Northeast Corridor vibrant and to prepare the roadmap for federal, state and private investment.

For the event video and photos, please visit the event's website at: <http://utrc2.org/events/vss-future-rail-investments>

## UTRC AT TRANSPORTATION RESEARCH BOARD 93RD ANNUAL MEETING

JANUARY 12-16, 2014 AT WASHINGTON, D.C.



### UTRC RESEARCHERS PRESENTED AT THE 93RD TRB MEETINGS

UTRC staff and consortium faculty participated at the 93rd Transportation Research Board Meeting held from January 12 - 16 2014. There were more than 100 papers and presentations delivered at TRB from UTRC Consortium faculty covering all kind of transportation related topics; Aviation, Bridges, Finance, Economics, Freight, Operations & Traffic Management, Pedestrian and Bicy-

clists, Policy and Safety, just to name a few.

UTRC has compiled a list of all these presentations in a compendium available online at <http://www.utrc2.org/publications/utrc-trb-2014-compendium>

## UTRC'S DISTINGUISHED LECTURER MATTHEW W. DAUS DELIVERS "GAME CHANGER" TECHNOLOGY DISRUPTION SPEECH IN WASHINGTON, DC AT USDOT HEADQUARTERS



Former TLC Commissioner/Chair and Coalition of Transportation Associations (COTA) President/ Board Chair Matthew W. Daus, congratulates his friend the newly appointed Chair of the NYC Council Transportation Committee, Ydani Rodríguez (second from left) at his first Transportation Committee meeting on January 29, 2014. Joining them are COTA's VP for Governmental Affairs, Barry Lefkowitz (third from left) and Windels Marx Special Counsel and former TLC Chief Judge, Pasqualino Russo (far right)

Matthew Daus, UTRC Distinguished lecture delivered a "Game Changer" speech at the request of the Assistant Secretary of the United States Department of Transportation (US DOT) in Washington, D.C. on February 6th, 2014. The two day conference hosted by the U.S. DOT's Research and Innovative Technology Administration (RITA) was entitled the Clean Transportation Sector Initiative Workshop – Reducing Greenhouse Gas Emissions Beyond 80% by Mid-Century. A select group of distinguished members from the private, public and academic sectors specializing in transportation and technology, as well as automotive and climate change experts attended and worked closely together for two straight days.

Workshop moderator Kevin Womack, the U.S. DOT's Associate Administrator for Research and Technology, coordinated excel-

lent sessions that highlighted the crossroads between technology and environmental sustainability. Day 1's program included keynote remarks by the U.S. DOT's Deputy Assistant Secretary for Policy, and sessions included the topics of Fuel Pathways, Greenhouse Gas Reductions, Roadway Electrification and Zero Emissions Strategies. Speakers included representatives from the National Aeronautics and Space Administration (NASA) and the National Renewable Laboratory. Day 2 of the workshop focused on "Disruptive Technologies – Clean Sector Strategy." U.S. DOT Assistant Secretary Gregory Winfrey delivered the keynote speech and discussed the activities and mission of RITA and how the ideas expressed would be collected, analyzed and relied on to make future policy decisions. To access the full article, authored by Matt Daus, please visit the website at: [http://tlc-mag.com/in\\_focus\\_mar14.html](http://tlc-mag.com/in_focus_mar14.html)

## UTRC AT THE TRANSACTION 2014 CONFERENCE

UTRC participated at the Annual New Jersey Transportation Conference and Expo -TransAction 2014, held at the Tropicanna Hotel, Casino and Conference Center, Atlantic City, NJ on April 8, 9 and 10th (Tuesday, Wednesday, and Thursday). TransAction 2013 featured more than 70 workshop sessions (4 & 5 concurrent throughout each day) specializing in bus, rail, roads, bridges, goods movement, pedestrian/ bicycle, paratransit, community transportation, ports, and much more. The conference served as a network opportunity for different transportation working agencies and groups from academia, private and public sector throughout tri-state area.

This outstanding conference & expo is for Professional Engineers, Planners, Operators, Consultants, Contractors, Suppliers, Municipal, County, and State Representatives, and Non-Profit and For-Profit Transportation Professionals and Elected/Appointed Officials This conference includes new and changing programs, grant writing and administration, rules and regulations, technology, etc. for bus, rail, LRT, road and bridge, goods movement (rail & truck), pedestrians, bicycling, paratransit, senior citizen & disabled resident transportation, community transit and shuttles, ridesharing, welfare to work, parking, ferryboats, and much more.

Transportation Expo: More than 120 booths featured an extensive selection of cutting edge, state-of the-art exhibits of transportation products and services from across America and Canada.

For more information, please visit the conference website at: [www.njtransactionconf.com](http://www.njtransactionconf.com)

## UTRC FACULTY PRESENTATIONS AT NJDOT

UTRC and NJDOT sponsored an In-House Lecture Series at the NJDOT Offices at Trenton, NJ. During the Fall 2014, four UTRC faculty presented at NJDOT. These presentations were very well attended and generated a lot of interest within NJDOT for future research in the region.

### Investigation of the Carrs Creek Geofam Project

Friday, October 17, 2014



Dr. Dawit Negussey, Professor of Civil and Environmental Engineering at Syracuse University presented at NJDOT on October 17, 2014 at NJDOT Headquarters at Trenton, New Jersey. Dr. Negussey presented findings of his UTRC funded project titled, Investigation of the Carrs Creek Geofam Project.

The I88 culvert crossing of Carrs Creek in Sidney, NY collapsed during the record setting Mid-Atlantic States Flood of June 2006. Rapid construction with geofam as lightweight fill enabled partial reopening of I88 by Labor Day 2006, but shortly after reopening of the roadway, rapid settlements developed. The geofam fill was removed and I88 was re-built using lightweight aggregates. An investigation of the rapid construction failure was completed in 2009. This report, sponsored by UTRC, examines the failure of the re-construction and the results of the subsequent investigation. Alternative causes for the failure have been identified based on previous observations, lab tests,

and computer models, review of field information, findings of the previous report, and discussions with NYSDOT engineers. Based on this analysis, the current report provides suggestions for improving rapid construction practice with geofam. Improvements in design and installation for future rapid construction applications are suggested.

### Road Traffic Congestion: An Examination of the Causes, Consequences, and Possible Congestion Relief Strategies

Friday, November 14, 2014



Dr. John Falcocchio, Professor at NYU Poly School of Engineering and Herb Levinson, Icon Mentor at UTRC presented on November 14, 2014 at NJDOT Headquarter at Trenton, New Jersey. This presentation is based on the recently completed book by Dr. John C. Falcocchio and Dr. Herbert S. Levinson, entitled "Road Traffic Congestion: A Concise Guide," scheduled for publication in early 2015.

Traffic congestion has been a part of city life since ancient times. Today, traf-

fic congestion is found in cities throughout the world. It continues to increase as cities' population and motorization grow, and public investments in roads and public transportation infrastructure have not adequately kept up with this growth. The current focus on the applications of advanced technologies (ITS) in the real-time management of transportation networks and travel demand, as well as the emerging promise of autonomous vehicles, offer near future expectations for greater transportation efficiency and for a more sustainable traveler and freight mobility.

The presentation will cover five topics:

- Types and Causes of Congestion
- Measuring Congestion
- Impacts of Congestion
- Congestion Relief Strategies
- Future Outlook



## Smart Driving Cars

-Where are we

-Where we'd like them to be in NJ

Thursday, December 11, 2014



Dr. Alain Kornhauser, Professor of Operations Research & Financial Engineering at Princeton University presented on December 11, 2014. Born in France, he immigrated to western Pennsylvania with his parents at the age of 7. He studied Aerospace Engineering at Penn State where he obtained a BS and MS. His research, focused on cavitation, earned him and his advisor, JW Holl, one of the highest ASME prizes, the Melville medal. He then transferred to Princeton's Aerospace and Mechanical Sciences Department, earning a PhD. in the Fall of 1970. He then joined the faculty of the Aerospace Engineering Department at the U of Minnesota as an assistant professor in January 1970. During his tenure he worked closely with Professors Wm. Garrard and Edward Anderson applying automation, network analysis and optimal control to transit vehicles. Together they made the UofM the leading research center for this then new form of urban transit.

Prof. Kornhauser returned to Princeton in the Fall of 1972 and continued his pivotal work in the network design and operational analysis of PRT. While at Princeton, he ex-

tended the large scale PRT network analysis capabilities to more conventional forms of transportation, rail and highway, creating the Princeton Transportation Network Model which pioneered the application of Geographic Information Systems in the quantitative analysis of large-scale transportation systems. Included in PTNM/GIS was the creation of the first digital map database of the North American Railway and Highway systems. PTNM/GIS proved pivotal in the restructuring of the bankrupt Northeast freight railroad system. In 1979 he founded ALK Technologies, Inc. that enhanced and utilized PTNM/GIS to assist the private North American Railroad System to rationalize its network structure and implement substantial operational efficiencies, including the creation of the first computer-graphic Operation Control Center at Canadian National and the first Optimal Locomotive Management System at Burlington Northern. ALK has evolved to create the standard digital map database for the North American roadway and railway systems that is used today by essentially every railroad and trucking company in North America. He has also been a pioneer in the development and market acceptance of turn-by-turn navigation systems. ALK's CoPilot system was the first nationwide GPS system on the market in August, 1997 and its current smartPhone and Tablet versions have gained substantial consumer acceptance around the world. After 33.5 years, he sold ALK to Trimble Navigation in December 2012.

As of the Fall of 2014, Prof. Kornhauser is in his 43rd year on the Princeton faculty as Professor of Operations Research & Financial Engineering. He serves as Director of the Transportation Program where he continues his basic research in Transportation focused on optimal system design and real-time operation. He was the Faculty Leader of Princeton's entries into the 2005 DARPA Grand Challenge and 2007 Urban Challenge and continues his interest in the complete automation of the automobile with particu-

lar interest in the autonomous Taxi concept and its potential to transform mass transit and deliver ubiquitous mobility to everyone. He is Faculty Chair of Princeton Autonomous Vehicle Engineering (PAVE) an extracurricular undergraduate Smart Driving Car research effort at Princeton, Editor of the Smart Driving Cars Newsletter ([www.SmartDrivingCar.com](http://www.SmartDrivingCar.com)) and Board Chair of the Advanced Transit Association (ATRA). He is currently in the process of creating a major Center for Research, Certification and Commercialization of Automated Vehicles @ Port Monmouth. In addition to his teaching and research duties he serves as the ORFE's Department's Director of Undergraduate Studies. Professor Kornhauser completed his 14th NYC Marathon in November 2012 by running his own 26.2 miles during NYC Marathon Sunday in lieu of the cancelled event.

## Warning Lights For Maximizing Worker Safety

Monday, December 15, 2014

Dr. John Bullough, a Senior Research Scientist at the Rensselaer Polytechnic Institute presented on December 15, 2014 at NJ Headquarters in Trenton, NJ.



Workers in the transportation, construction and utilities sectors are over-represented in terms of fatal accidents on the job. In many situations, visual signals such as

warning beacons, barricade lights and other flashing yellow lights form a critical front line of defense for these workers. Yet the requirements for these lights have evolved somewhat haphazardly over the years, and there is little coordination or integration when lights on multiple vehicles or other devices are used in a single work location. Building on previous research for the University Transportation Research Center, and as part of an ongoing project for the National Institute of Occupational Safety and Health (NIOSH), the Lighting Research Center at Rensselaer Polytechnic Institute is undertaking a systematic investigation of the characteristics of warning beacons to provide optimized visual information to drivers that will reinforce worker safety. Characteristics being evaluated include the intensity, number and flash rate of warning lights, and novel ways for lights on different vehicles and equipment to work together to optimize visual information and safety. The presentation will include preliminary recommendations for the design and implementation of warning lights to minimize accidents and protect workers.

*The presentation was co-authored by Mark Rea, Director of the Lighting Research Center at Rensselaer Polytechnic Institute.*

## INTERNATIONAL ASSOCIATION OF TRANSPORTATION REGULATORS (IATR) NEW ORLEANS 2014 CONFERENCE



From L to R: Left to right, IATR President Matthew Daus, International Driver of the Year Fred Amofo, NY Daily News reporter Pete Donohue, IATR Board Chair Tom Drischler, and Michael Shank of Mobility Works.

Photo by Wim Faber/www.taxiintelligence.com

UTRC Distinguished lecturer and IATR president, Matthew W. Daus hosted the 2014 IATR Conference. UTRC Director, Dr. Camille Kamga, a member of the IATR Academic Research Committee attended the conference. The IATR welcomed government transportation regulators and vendors from around the world in New Orleans, Louisiana (NOLA) from September 21-24, 2014. A record number of conference attendees were educated on the latest in technology, accessibility and regulatory developments everywhere. UTRC distinguished lecturer, Matthew W. Daus was honored to have been recognized by IATR colleagues, who unanimously re-elected him pro bono President for many years to come. The theme of this 27th Annual Conference of the International Association of Transportation Regulators (IATR) was "A New World Order for Ground Transportation Regulation," which was also the title of Matt's State of the IATR speech delivered at the conference.

IATR ongoing initiatives include implementing important reforms and integrity enhancements for its members via the Passenger

Safety and Security Act (PASS Act) in Congress. It is also generating the issuance of a Request for Proposals or Qualifications for vendors to develop a national criminal background check clearinghouse for regulators. This will allow IATR to collect and share data of licensee criminal convictions from other states. IATR new initiatives include:

- (1) the first ever IATR Journal of Transportation Regulation;
- (2) the establishment of a government regulator training certification or accreditation program;
- and (3) the issuance of a Request for Information (RFI) to explore the establishment of an IATR driver training certification program.

Matt has put together a recap of the conference in his column that can be accessed at: [http://www.tlc-mag.com/in\\_focus\\_nov14.html](http://www.tlc-mag.com/in_focus_nov14.html)

## UTRC AT THE 2014 NJDOT SHOWCASE



From L to R: Dr. Hani Nassif, Rutgers University; Dr. Steven I-Jy Chien, New Jersey Institute of Technology, Dr. Camille Kamga, UTRC; Edward Kondrath, NJDOT at 16th NJDOT Showcase

UTRC staff attended the 16th Annual NJDOT Research Showcase, held on October 23rd, 2014 at the Conference Center at Mercer, on the campus of Mercer College. This annual 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 year's conference theme was Progress in Transportation Research Using Technology Research was highlighted in presentations and academic displays.

For More Information, please visit: <http://cait.rutgers.edu/cait/16th-annual-njdot-researchshowcase>

# UTRC'S NEWSLETTER

UTRC's Newsletter, Research News, is published quarterly and provides information to transportation professionals about research, education, and outreach activities in Region 2. Research news is available online. <http://utrc2.org/Newsletter>



# UTRC'S WEBSITE

The University Transportation Research Center Region 2 maintains a Website at [www.utrc2.org](http://www.utrc2.org) which contains a comprehensive overview of the center's objectives, purposes and functions for planning and management of regional transportation systems.

The Website serves as an information tool for those transportation agencies that are interested in the center's research activities and as a bulletin board for students who are interested in pursuing transportation research studies toward advanced degrees.

The Website is a focal point for updated information presented in an accessible format which is visually pleasing and logically navigable.

## UTRC'S VIDEO BRIEFING ON COMPLETED RESEARCH

UTRC is pleased to announce its new initiative; Video Briefing of Research Projects. This is our latest endeavour in meeting our commitment to broadly disseminate our research-related publication to the public, which already includes the following channels:

- Press Releases to our listserv of 4200+ people
- Website portal
- Social Media Sites
- Transportation Research Libraries

As a requirement of our new research grant under MAP 21, we must provide a research briefing on all completed research projects. UTRC has committed to accomplish this by disseminating research results through the posting of all project-related publications, written research briefs, and short video briefings. The intent of the video tool is to provide our interested readers/audience with a quick overview of the projects.

To view videos, please visit our Vimeo channel at: <https://vimeo.com/utrcregion2>

