ANNUAL REPORT 2015

UNIVERSITY TRANSPORTATION RESEARCH CENTER • REGION 2

The George Washington Bridge, New York

Annual Report – 2015

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

This report represents the activity of the UTRC from January 1, 2015 – December 31, 2015.

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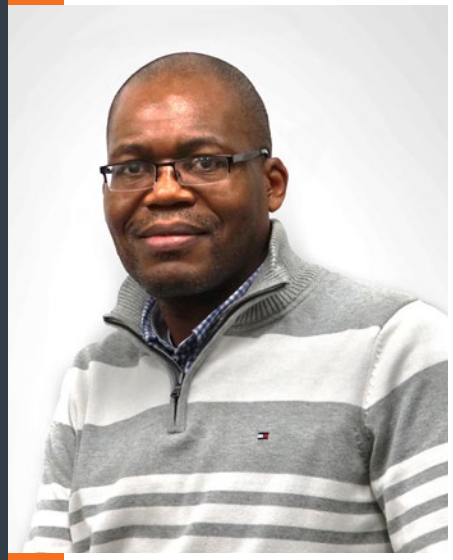
DIRECTOR'S MESSAGE



CAMILLE KAMGA

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

Friends and Colleagues,

This is the time of year where we take a moment to highlight our Center's activities over the past year and identify areas where we can improve.

This message comes at the dawn of a key policy success with Congress approving a five-year surface transportation reauthorization bill, and therefore, ending a decade of stopgap funding extensions that had frustrated the transportation community. Although, we applaud the passage of a the first surface transportation bill funded for longer than two years in almost two decades and which includes funding for some good programs, we must also recognize that there is still more work to be done to provide adequate funding for transportation research and education. This becomes even more important as the transportation sector traverses a new era dominated by innovations not seen in decades. Disruptive technologies, from shared mobility opportunities due to the emergence of Transportation Network Companies (TNC's) to the near-future deployment of self-driving cars, are beginning and will continue to shape our personal mobility options.

You will see, as you review this annual report, that in this year, we have accomplished a number of key initiatives to position our Center in the forefront of this technological revolution—or evolution — depending on how you see it. Through the assistance and the strong leadership from the New York State Department of Transportation's Connected, Autonomous and Automated Vehicle program, we have been spending a great deal of time working to establish the SMART consortium. This group seeks to form a framework for collaboration with 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. Also, since we were aware that USDOT planned to issue the RFP in 2015 for the Wave 1 Connected Vehicle Pilot Deployment Concepts, we prepared by organizing a well-coordinated consortium comprised of various key stakeholders from State and Local government, universities, research institutions, and the private sector.

Together we have developed a list of priority Connected Vehicle applications and begun the process of conceptualizing the deployment of those applications. I am pleased to report that two proposals involving our Center were successfully submitted to USDOT. A proposal led by NYSDOT to test CV applications in a corridor at Albany is still under consideration for funding by USDOT as it was determined acceptable. The proposal led by NYCDOT was funded and is underway with the participation of our Center.

I trust that as you view through the pages of this report, you will agree with me that 2015 has been a very productive year for the Center, owing to all of the significant events that took place. We hosted and co-hosted many events including seminars, workshops, symposiums, summits, and conferences. We partnered with the New York State Department of Transportation and the American Association of Highway Transportation Officials (AASHTO) to organize and host the annual AASHTO Subcommittee on Bridges and Structures (SCOBS) working meeting, which is a four-day event comprised of two days of technical committee meetings and two days of a general session. More than 550 participants from around the nation attended the meeting held at Saratoga Springs, NY. We were also honored by a visit from the Assistant Secretary for Research and Technology, Mr. Gregory Winfree, to our Center during the year. With the Regional Plan Association, we organized and hosted Investing in an Accessible New York: A Conference on Public Transportation and New York's Future. This successful conference brought together the nation's transportation leaders to discuss how New York City's transit network has shaped the city we know today and the role that transit investments will play in New York's future.

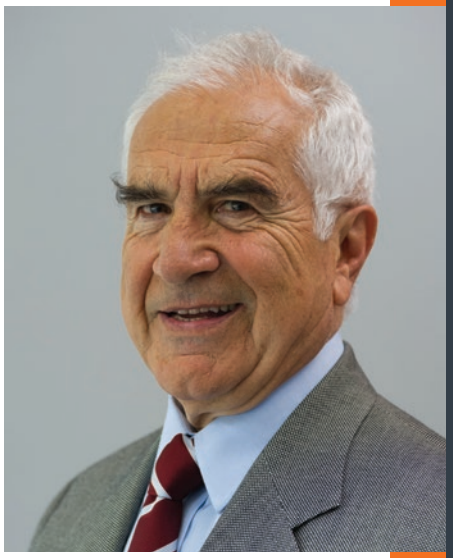
With funding from USDOT and our local transportation agency-partners, we have initiated a substantial amount of new research projects, continued investigation through ongoing research projects, and successfully completed and disseminated final reports of completed research projects. We proudly awarded scholarships to many students by providing financial support towards their education and professional development. These are only some of the achievements we attained during the year 2015 and there are many others, too numerous to mention in these few words.

As I conclude, in light of the passage of the Fixing America's Surface Transportation Act or "FAST Act", which continues to authorize funding for the UTC program, we are determined to take our exceedingly successful organization to the next level of excellence. The activities illustrated in this annual report are part of the process and contribute to the fulfillment of our vision. We are looking forward again with much optimism to compete for federal funding under the upcoming grant solicitation to be issued by USDOT.

CHAIRMAN'S MESSAGE

JOHN C. FALCOCCHIO

Chairman
Professor, Transportation Planning and Engineering
NYU Tandon School of Engineering



This annual report summarizes the numerous activities of UTRC in the areas of Education and Workforce Development, Research, and Technology Transfer that took place in 2015. The products of these activities have contributed to a better understanding of our regional transportation issues and of the role of advanced technologies in achieving a sustainable transportation system. To this end, we have assisted the New York City Department of Transportation in its grant application to the USDOT, and its subsequent award, of the Connected Vehicle Project in New York City.

A key UTRC activity over the years has been a successful education and technical training program for employees of local agencies. I believe education and training activities will become even more important in the near future in light of expected high staff turnovers at State and Regional DOTs.

Rapid changes in transportation brought about by intelligent technologies require appropriate staff skills to deploy, operate and maintain Intelligent Transportation Systems (ITS). I am confident UTRC, with its unequaled knowledge-pool of our consortium partner institutions, can meet the challenges that lie ahead.

DIRECTOR EMERITUS'S MESSAGE

Robert E. Paaswell

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

For the last two years I have taught a course on Transportation Policy to Civil Engineering Juniors and Seniors. While professional societies, such as ASCE state how important it is for CEs to have policy as part of their education, a full technical curriculum leaves little room for a full course. I designed a one hour per week, 14 week course that encouraged participation, but brought the students right into some of the most critical issues of late 2015 (or, in reality, much longer). The course started with an introduction to the definition of policy, and why, unlike their math or structures courses, each problem did not have a clear easy of even distinct solution. From September until late December we tracked the progress of the "highway" bill, the looming crisis of Positive Train Control, and the new issues arising from autonomous vehicles.

The jumping off point was the Constitution of the US, how the Government is organized, the role of USDOT, laws, regulations, authorizations and appropriations. The hook was that funding of transportation programs meant funding of jobs for CEs. There were lively discussions, but the takeaway for me is how much we (this emerging generation of professionals) are fully integrated into what I used to call "New Paradigms". Autonomous vehicles, new energy sources, HSR, mobile ticketing, and life controlled from their smart devices are defining what the transportation scene is rapidly becoming. UTRC is now working (and playing a leadership role) in areas not defined a few short years ago, and our students have prepared themselves to work in these areas, while committing themselves to a better environment. They have learned from their policy studies that they are stakeholders in their environment both as professionals, and as citizens.

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 multimodally, 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

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

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

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

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

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

UTRC, IN CLOSE COLLABORATION WITH **NYSDOT**, HOSTED THE **4TH CONNECTED AND AUTONOMOUS VEHICLE SYMPOSIUM**

The UTRC's fourth annual connected and autonomous vehicle conference took place at the SUNY Polytechnic (Poly) Institute in Albany, NY on December 2, 2015. This year's symposium theme was **Innovative Applied Research and Deployment Opportunities.** The 4th symposium on Connected and Autonomous Vehicle had the greatest number of registrations to date with approximately 200 attendees from all over the nation. This Symposium offered public transportation policy makers, public transportation operating agency executives, university researchers and industry representatives across the Internet of Things (IoT) universe of devices, connectivity and big data that offer vehicle related products or services the opportunity to hear directly from leaders in industry, university and government (IUG) that are contributing to significant connected and autonomous vehicle deployments.

Representatives from state government including Adam Spence, Assistant Secretary for New York Governor Andrew Cuomo and Roderic Sechrist, Assistant Commissioner of New York State Department of Transportation both offered remarks. Dr. Mohamad Talas of New York City Department of Transportation detailed plans for one of the largest connected vehicle deployments in the US and Craig Marcinkowski of Gryphon Sensors offered Central New York's plan for creation of the Global Center for Unmanned Systems and Cross-Connected Platforms. Michael Fancher of SUNY Poly and Joah Sapphire of Global Dynamic Group summarized the SMART Consortium's support of these projects. Keynote addresses from leading industry experts included Dr. Tom Mueller of AMS, Dr. Tao Zhang of Cisco, and David Bruemmer of 5D Robotics. Research performed by academia institutions were presented and poster exhibits highlighting related projects performed by our universities.

The summary of the conference, videos and photos are available on the event's website at:
www.connectedvehicleworkshop.com

Symposium Attendees - (Photo by Melissa Preston Renzi/SUNY Polytechnic Institute)

Adam Spence
Economic Development and Innovation in the Executive Chamber of New York Governor Andrew M. Cuomo

Thomas Mueller
Business Line Mobility Sensors, AMS

Tao Zhang
Smart Connected Vehicles, CISCO Systems

UTRC HOSTED THE SECOND SMART CONSORTIUM MEETING: STRATEGIES FOR SUSTAINABLE DEVELOPMENT AND DEPLOYMENT OF CONNECTED AND AUTONOMOUS VEHICLES

Through the leadership of the UTRC and the SUNY Polytechnic (Poly) Institute, the Strategic Market Alignment for Roadway Technologies (SMART) Consortium strategy was launched in 2014 and now serves as one of the premier platforms to align leading industry experts, university researchers and government officials to support the sustainable development and deployment of connected and autonomous vehicles. In 2015, participants of the SMART Consortium supported NYSDOT's Connected Vehicle proposal deemed acceptable by USDOT and NYCDOT's Connected Vehicle proposal funded by USDOT. To continue the momentum into 2016, Joah Sapphire of Global Dynamic Group moderated the second SMART Consortium meeting held on December 3, 2015 at SUNY Poly's Smart Cities Technology Innovation Center (SCiTI) at Kiernan Plaza in Albany, NY. The first half of the meeting included presentations by Brian Digman of NYS Thruway, Dr. Mohamad Talas of NYCDOT, Mahanth Joishy of NYCDCAS, Bill Geary of Erie County, Dr. Everette Joseph of NYS Mesonet and Adam Ruder of NYSERDA detailing government projects and funding opportunities in the pipeline. The second half of the meeting included presentations by David Bruemmer of 5D Robotics, Dr. Stelios Patsiokas of Sirius XM, Dr. Tao Zhang of Cisco, Dr. Alain Kornhauser of Princeton, Brian McLain of Syracuse University and Kishor Bagul of Cloud and Things summarizing industry and university driven research and development. This meeting provided the unprecedented opportunity for key decision makers to have substantive face to face discussions around specific projects to support the collaboration necessary for the development and deployment of complex system of systems. There was unanimous consent among the participants of the meeting to continue the SMART Consortium efforts and expand the number of participating representatives from industry, universities and government.

To learn more about Smart Consortium, please visit our Connected Vehicle Conference's website at: **www.connectedvehicleworkshop.com**

NEW YORK CITY RECEIVED **USDOT** FUNDING FOR THE CONNECTED VEHICLE PILOT PROGRAM

The University Transportation Research Center is a member of the project team selected by the U.S. Department of Transportation to pilot the Next Generation Connected Vehicle (CV) Technologies in New York City. On September 14, 2015, at the New York City Joint Management Traffic Center, the U.S. Department of Transportation Secretary, Anthony Foxx, revealed that New York City is among the three locations including Wyoming, and Tampa, FL to receive up to $42 million to pilot next-generation technology in infrastructure and in vehicles. The three locations were selected in a competitive process for the initial deployments of connected vehicle technology in real-world settings with the aim of delivering near-term safety, mobility, and environmental benefits to the public.

New York City provides a unique opportunity to demonstrate the potential safety and mobility benefits of the CV Applications and technology in a dense and challenging urban environment. New York City will receive $20 million to install vehicle-to-vehicle (V2V) technology in up to 10,000 vehicles, including cars, buses, taxis, and trucks, that frequently travel in Midtown Manhattan, as well as vehicle-to-infrastructure (V2I) technology throughout Midtown. This includes upgrading traffic signals with V2I technology along First, Second, Fifth and Sixth avenues in Manhattan between 14th and 67th streets, and on Flatbush Avenue in Brooklyn between Tillary Street and Grand Army Plaza. Additionally, roadside units will be equipped with connected vehicle technology along the FDR Drive between 50th Street and 90th Street.

The goals of the NYC Connected Vehicle Pilot Program are well aligned with the City's Vision Zero program, which seeks to reduce the deaths of pedestrians and make the City's streets safer for all modes of transportation. To further advance Vision Zero, New York City will deploy a number of different CV Applications in several key areas of the City.

The New York City Department of Transportation with the participation of local stakeholders from the public, private, and non-for profit advocacy groups lead the NYC pilot. The project team includes the following firms: JHK Engineering, Batelle, Cambridge Systematics, Security Innovation, KLD Engineering, Cohda Wireless, and Savari. The pilot is for a duration of 50 months and will be completed in 2019.

UTRC, IN COLLABORATION WITH **NEW YORK STATE DEPARTMENT OF TRANSPORTATION**, ORGANIZED THE **2015 AASHTO** SUBCOMMITTEE ON BRIDGES & STRUCTURES ANNUAL MEETING

UTRC in collaboration with New York State Department of Transportation, organized the 2015 AASHTO Subcommittee on Bridges & Structures Annual meeting that was held from April 19-24 at the Saratoga Hilton, NY. The conference was well attended by more than 500 people from across the nation. The Annual AASHTO Subcommittee on Bridges and Structures (SCOBS) working meeting is a 4 day event comprised of two days of technical committee meetings and a two day general session. These meetings are open to state and federal engineers, academicians, consultants, contractors and industry representatives, and presented a good opportunity to share ideas. The second two days of the meeting included a featured Chairman's Lecture and a General Session. During the General Session, all changes to the AASHTO Bridges and Structures publications were presented, discussed by the full subcommittee and balloted. This meeting was also opened to the industry and provided a good place to learn of upcoming changes to specifications.

The 2016 SCOBS annual meeting will be held on June 26-30, 2016 in Minneapolis, Minnesota.

A Group Photo of State Bridge Engineers at the 2015 AASHTO SCOBS Meeting

UTRC FACILITATED THE 2015 NYSDOT RESEARCH PEER EXCHANGE MEETING

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

The Transportation Research and Development Bureau (TRDB) of the Engineering Division and the Research and Policy Studies Section of the Policy and Planning Division of New York State Department of Transportation (NYSDOT) hosted this research peer exchange. Representatives from three State DOTs (MassDOT, NJDOT, and PennDOT), Office of the Assistant Secretary for Research and Technology (OST-R/USDOT), and New York State Energy Research and Development Authority (NYSERDA) joined representatives from NYSDOT and FHWA-New York Division to exchange ideas, share experiences and best practices in the following focus area: **Creating an Effective State Planning and Research Program.**

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

The focus of this peer exchange was to share methods for delivering an effective State Planning and Research (SPR) program and discussions were arranged around the following topics: Key functions necessary to carry out an effective research program; How states currently deliver these key functions (e.g., within one program office, delivered with support from across the agency, outsourced); What training is or should be provided to ensure staff have the necessary skills to effectively deliver the program; Experience/best practices/lessons-learned to share with others.

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

The final report of peer exchange meeting will be available at the NYSDOT's website.

DR. NEVILLE A. PARKER WAS HONORED BY THE COUNCIL OF UNIVERSITY TRANSPORTATION CENTERS (CUTC)

On January 10, 2015, Dr. Neville A. Parker, Herbert G. Kayser Professor of Civil Engineering at The City College of New York, has been awarded the Distinguished Contribution to University Transportation Education and Research Award by the Council of University Transportation Centers (CUTC).

The national honor recognizes individuals with a history of outstanding contributions to university transportation education and research that has benefitted transportation.

CUTC was founded to promote collaboration between university-based transportation research centers and universities, government and industry. Its members include more than 90 of the nation's leading university-based transportation research and education programs. In addition to his leadership in transportation education and research, Professor Parker has been hailed for his success in increasing the participation of underrepresented minorities in engineering and inspiring students and researchers at City College. He directs the CUNY **Institute for Transportation Systems** (ITS) and is project director of the NYC Louis Stokes Alliance for Minority Participation (NYCLSAMP) program, another CCNY-based CUNY initiative.

A 1965 alumnus of CCNY's **Grove School of Engineering** who returned to teach at his alma mater in 1988, Professor Parker has been previously honored nationally for his work. In 1996, he received the Giants in Science Award from the Quality Education for Minorities (QEM) Mathematics, Science, and Engineering (MSE) Network.

NEW YORK STATE FAIR USING VIDEO FOR IMPROVING TRAFFIC OPERATIONS

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

Instead of police officers receiving verbal instructions on how to carry out their duties, they were able to be visually shown via these short video clips. The figure below shows a screenshot for the website that was created for this project. The website contains a static map of the NYS Fairgrounds and is color coded based on the various parking lots, the parking lot colors are easily recognizable item for people involved with traffic management during the Fair including the police officers and traffic management personnel. On the website there are key locations identified that can be clicked to reveal the links to the video clips.

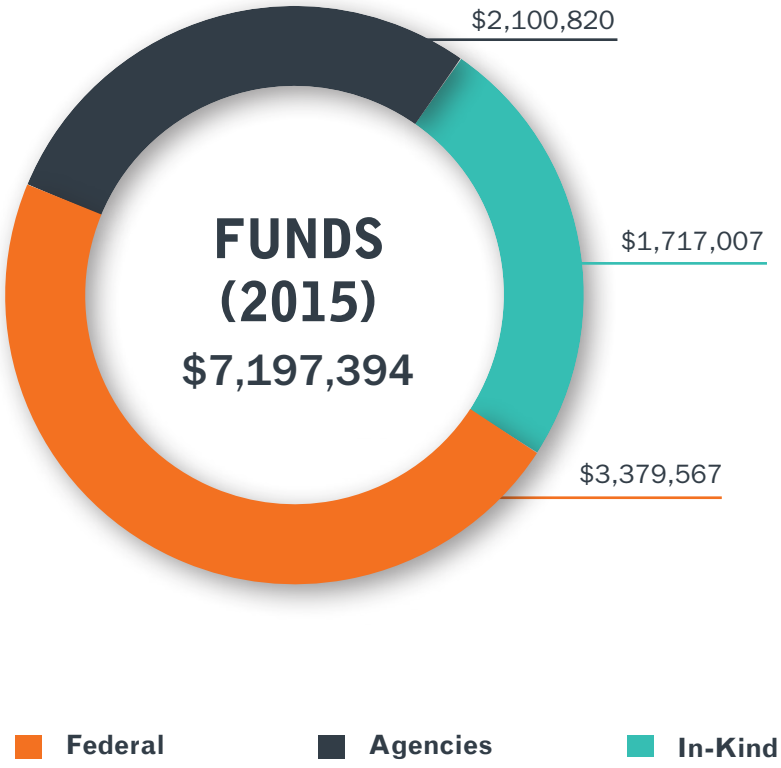
This platform was made in an online version which can be accessed at **transp.rpi.edu/~NYSF/index.htm** and an off-line version that could be loaded on to a tablet. The reason the off-line version was created was to make sure the officers could view the materials even if an internet connection was not available which could be the case while they were working at the Fair.

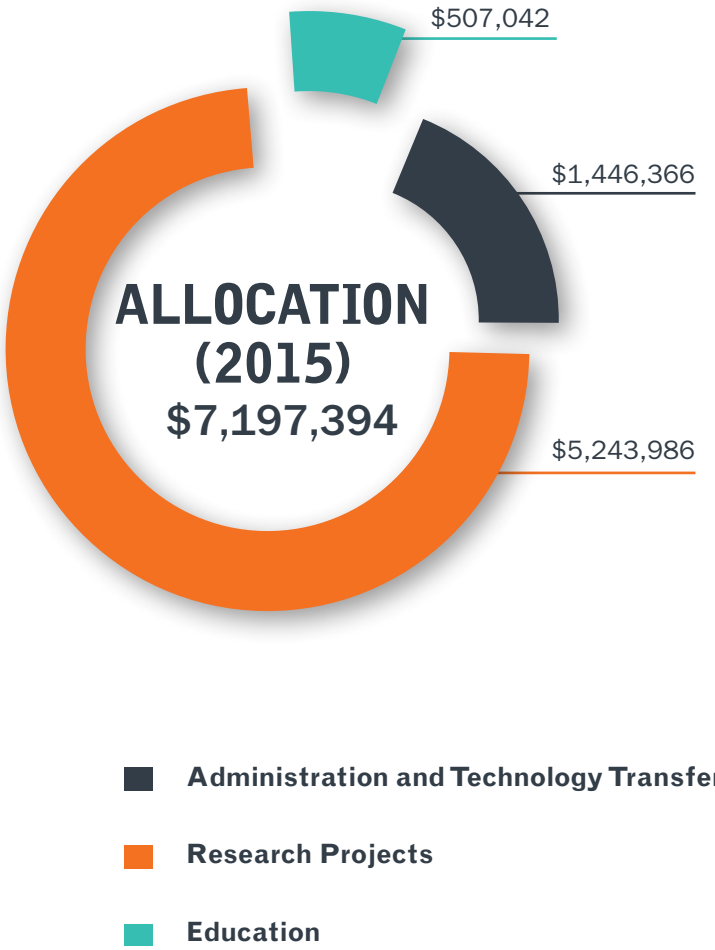
Mobile Information Technology for Improving Traffic Management at the NYS Fair

FINANCIAL REPORT

The following charts summarize the UTRC funding and allocations for the calendar year 2015. The University Transportation Research Center Region 2 has continued to support its core programs with funding from grants under the extension of SAFE-TEA-LU and MAP-21. During this year, the annual Federal grant allocated to our programs was approximately $3.4M with around $1.8M support from regional public agencies and $2.1M cost share from academia institutions.

Continuing with its tradition, strong partnerships, and solid financial commitment from federal, state, and local transportation agencies, UTRC allocated 7 percent of its total budget to our educational initiatives and 73% to support and carry out many research projects. The remaining 20 percent was applied to support administration and technology transfer programs.





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 Tandon 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.

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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.

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 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.


11 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.

12 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.

13 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

14 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.

15 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.

16 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.

17 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.

18 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.


RESEARCH

The UTRC 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 HAS FUNDED THE FOLLOWING PROJECTS IN RESPONSE TO ITS 2015 REQUEST FOR PROPOSALS

The projects fall into the following research categories

Faculty Initiated / **Emerging Investigators** / **Education and Technology Transfer** / **Research Cluster Team**

Faculty Initiated Projects

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

Joseph Berechman
City College of New York/CUNY

Transportation Infrastructure Robustness: Analysis and Measurement

Jamie Kang
University at Buffalo/SUNY

Market Potential for Battery Electric Vehicles based on Multi-Day Activity-Travel Patterns

Rae Zimmerman
New York University

Public Transit and Mandatory Evacuations Prior to Extreme Weather Events in New York City

Xuegang (Jeff) Ban
Rensselaer Polytechnic Institute

Developing a Macroscopic Decision Making Tool for Emergency Evacuation Planning

Baris Salman
Syracuse University

Innovative Techniques for Maintenance, Repair, and Reconstruction (MRR) of Asphalt Roadways

Kirk Barrett
Manhattan College

Development of a New, Effective and Low-cost Media for Sustainable Management of Polluted Road Stormwater in Highly Urbanized Areas

Joyoung Lee
New Jersey Institute of Technology

Smart Bus System under Connected Vehicles Environment

Sherif Lotfy Abdelaziz
SUNY Stonybrook

Self-Heated Pavements

Roger Chen
Rochester Institute of Technology

Building a Sense of Place in an Information Era: Accessibility, Connectivity and Travel

Parth Bhavsar
Rowan University

Risk analysis of autonomous vehicles in mixed traffic streams

Michael Manville
Cornell University

Do Consumer Expenditures Affect the Demand for Driving?

Jonathan Voris
New York Institute of Technology

Secure and Private Sensing for Driver Authentication and Transportation Safety

Roger Anderson
Columbia University

Intelligent Wireless Charging for Electric Buses in a Smart City

Didier Valdes
UPR Mayaguez

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

Alison Conway
City College of New York/CUNY

An Examination of Commercial Vehicle Access to Residential Buildings in New York City

Naresh Devineni
City College of New York/CUNY

An Agent-Based Disaster Response Inference Model for Assessment of Transportation Risk under Extreme Events.

Sulapha Peethamparan
Clarkson University

Alkali Silica Reaction (ASR) in Cement Free Alkali Activated Substainable Concrete

Emerging Investigators

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

Joseph Bechtel
The College of New Jersey

Improving Cross-Frame Design to Reduce the Effects of Skew in Steel I-Girder Bridges

Qian Wang
Manhattan College

A Probability-Based Approach for Assessment of Roadway Safety Hardware

Shikui Chen
SUNY Stonybrook

Computational Synthesis of High-Performance Non-Pneumatic Tires

Candace Brakewood
City College of New York/CUNY

Evaluating the Impacts of Real-Time Information on Subway Ridership in New York City

Qing He
University at Buffalo/SUNY

Heterogeneous Regional Signal Control

Sung Hoon Chung
SUNY Binghamton

Intelligent Wireless Charging for Electric Buses in a Smart City

Neveen Shlayan
SUNY Maritime

Spectral Based Controllability-preserving Pedestrian Evacuation Network-Synthesis Using Multilayered Estimation Models in Real-time

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.

Nada Assaf-Anid
New York Institute of Technology

UTRC Education and Technology Transfer: NYIT proposal for a Transportation Innovation Series

Mitchell Moss
New York University

Emerging Leaders in Transportation

Hongmian Gong
Hunter College/CUNY

Developing GIS-T in the Geography Curriculum at Hunter College

Research Cluster Team

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

Changxu Wu
University at Buffalo/SUNY

Drinking and Driving Interruption and Prevention Research Cluster Team: A Multidisciplinary Research to Solve a Critical Transportation Safety Problem

Completed Projects

For the year 2015, UTRC has completed following projects and published their final reports online at the UTRC's website.

Project Title / PI(s) / Institution	Sponsor(s)
High Visibility Reflective Sign Sheeting Evaluation **Dr. Mark S. Rea, Dr. John D. Bullough** Rensselaer Polytechnic Institute	UTRC PDF Download link
Robotic Inspection of Bridges Using Impact-echo Technology **Dr. John (Jizhong) Xiao, Dr. Anil Agrawal** The City College of New York, CUNY	UTRC PDF Download link
Analysis of Environmental and Infrastructure Impacts of Transportation Activities Associated with High Volume Horizontal Hydraulic Fracturing Operations in the Marcellus Shale Formation Using the Geospatial Intermodal Freight Transport (GIFT) **Dr. Karl Korfmacher, Dr. Scott Hawker, Dr. James Winebrake** Rochester Institute of Technology	UTRC PDF Download link
The Effects of Public-Private Partnerships on Traffic Safety: Evidence from Mexico **Dr. Rick Geddes** Cornell University	UTRC PDF Download link
Determining Binder Flushing Causes in New York State **Dr. Thomas Bennert** Rutgers University	NYSDOT & UTRC PDF Download link
The Politics of Infrastructure Investment Decision-Making: Report of the Statistical Analysis of Selected Hypotheses **Dr. Joseph Berechman, Dr. Patrizia Nobbe** The City College of New York, CUNY	UTRC PDF Download link
Subsurface Imaging of Corrosion in Painted Steel Bridges **Dr. Alexey Sidelev** New York University	UTRC PDF Download link

Project Title / PI(s) / Institution	Sponsor(s)
Freight Tricycle Operations in New York City **Dr. Alison Conway, Dr. Camille Kamga** The City College of New York, CUNY	NYSERDA, NYSDOT & UTRC PDF Download link
Assessing Behavior Changes Under The Influence of Travel Demand Management Strategies **Dr. Xiaokun (Cara) Wang** Rensselaer Polytechnic Institute	UTRC PDF Download link
Effectiveness-Based Pavement Preservation Selection Based on Statistical Analysis of Long Term Pavement Performance Data Research Brief **Hao Wang** Rutgers University	UTRC PDF Download link
Designing, Developing, and Implementing a Living Snow Fence Program for New York State **Dr. Timothy Volk** State University of New York (SUNY)	NYSDOT & UTRC PDF Download link
Impact of Polymer Modification on Mechanical and Viscoelastic Properties **Dr. Yusuf Mehta** Rowan University	UTRC PDF Download link
Analysis of Energy Efficient Highway Lighting Retrofits **Dr. Mark Rea, Dr. John Bullough** Rensselaer Polytechnic Institute	NYSDOT & UTRC PDF Download link
Integrated Vegetation Management Program Enhancements **Dr. Christopher Nowak** State University of New York (SUNY)	NYSDOT & UTRC PDF Download link

Project Title / PI(s) / Institution	Sponsor(s)
Empowering Individuals to Make Environmentally Sustainable and Healthy Transportation Choices in Mega-Cities through a Smartphone App **Dr. Yan Zheng** Queens College, CUNY	UTRC PDF Download link
Using Mobile Computers to Automate the Inspection Process for Highway Construction Projects **Dr. Didier Valdes, Dr. José L. Perdomo** University of Puerto Rico, at Mayaguez	UTRC PDF Download link
Consistency of the New York State Bridge Inspection Program **Dr. Anil Agrawal, Dr. Glenn Washer** The City College of New York, CUNY	NYSDOT & UTRC PDF Download link
Verification/Development of Seismic Design Specifications for Downstate Zone **Dr. Anil Agrawal, Dr. Huabei Liu** The City College of New York, CUNY	NYSDOT & UTRC PDF Download link
Evaluating the Role of Private Investment in Infrastructure Assets **Dr. H. Oliver Gao** Cornell University	UTRC PDF Download link
Requirements, Model and Prototype for a Multi-Utility Locational and Security Information Hub **Dr. Fadi A. Karaa** New Jersey Institute of Technology	UTRC PDF Download link
Investigating the Network System Effects of Mileage Fee **Dr. Xuegang (Jeff) Ban** Rensselaer Polytechnic Institute	UTRC PDF Download link
The Role of Social Media in Improving the Safety and Efficiency of Traffic Operations during Non-Routine Events such as Incidents and Planned Special Events **Dr. William "Al" Wallace, Dr. Xuegang (Jeff) Ban** Rensselaer Polytechnic Institute	UTRC PDF Download link

Project Title / PI(s) / Institution	Sponsor(s)
Real-time Dynamic Pricing for Bicycle Sharing Programs **Dr. Changhyun Kwon** State University of New York (SUNY)	UTRC PDF Download link
National Aviation Security to Cyber-terrorism: An Integrated Framework to Quantify the Economic Impacts of Cyber-terrorist Behavior **Dr. Ji Young Park** State University of New York (SUNY)	UTRC PDF Download link
Omitted Variable Bias in Crash Data Analysis **Dr. Robert B. Noland** Rutgers University	UTRC PDF Download link
Benchmarking for Asset Hierarchy, Criticality Assessment and Risk Analysis at the MTA and other Transportation Companies **Dr. Mohsen A. Jafari** Rutgers University	MTA & UTRC PDF Download link
Effects of Overweight Vehicles on NYSDOT'S Infrastructure **Dr. Michel Ghosn, Dr. Neville A. Parker** The City College of New York, CUNY	NYSDOT & UTRC PDF Download link
Development of a Comprehensive Inventory Management System for Underground Fiber Optic Conduits **Dr. Fadi A. Karaa** New Jersey Institute of Technology	UTRC PDF Download link
IIMS Staten Island Web and Smartphone Development, Deployment and Evaluation **Dr. John C Falcocchio, Dr. Adel Sadek** (NYU Polytechnic School of Engineering) State University of New York (SUNY)	NYSDOT & UTRC PDF Download link

FEATURED PROJECTS AT UTRC IN THE YEAR 2015

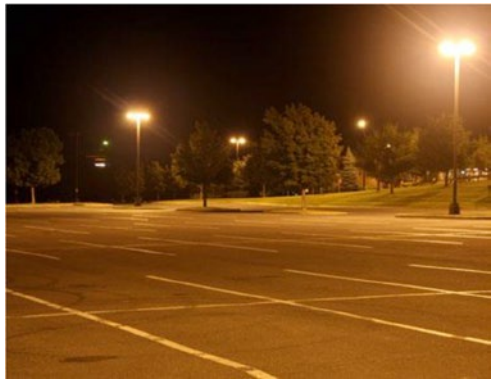
Analysis of Energy Efficient Highway Lighting Retrofits

COMPLETED

Principal Investigator(s):
Dr. Mark Rea, Dr. John Bullough

Institution(s):
Rensselaer Polytechnic Institute

Sponsor(s):
New York State Department of Transportation (NYSDOT)
University Transportation Research Center (UTRC)



Solid state lighting technology is advancing rapidly to a point where light emitting diode (LED) lighting systems can be viable replacements for existing lighting systems using high pressure sodium (HPS). The present report summarizes analyses conducted to document existing lighting conditions along a parkway (Southern State Parkway, Long Island) and an arterial roadway (Central Avenue, Albany County). Several LED alternative lighting systems were compared using photometric analyses to identify ones that meet light level criteria for each roadway type; several options were available that resulted in energy savings compared to the existing HPS lighting systems. Energy economic analyses confirmed that the initial investment could be paid back in terms of reduced operating costs, and that energy savings were larger for LED systems when compared to HPS systems that produced similar levels to those from the LED alternatives. The report concludes with considerations for incorporating LED performance characteristics, such as ensuring they do not produce interference with radio equipment, into specifications for LED retrofit alternatives.

Access the full report at:
www.utrc2.org/sites/default/files/Final-Energy-Efficient-Highway-Lighting-Retrofits.pdf

Freight Tricycle Operations in New York City

COMPLETED

Principal Investigator(s):
Dr. Alison Conway, Dr. Camille Kamga

Institution(s):
The City College of New York, CUNY

Sponsor(s):
New York State Energy Research and Development Authority (NYSERDA)
New York State Department of Transportation (NYSDOT)
University Transportation Research Center (UTRC)

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

Access the full report at:
www.utrc2.org/sites/default/files/pubs/Final-Freight-Tricycles-NYC.pdf

Impact Analysis of Recreational Transit Services on Local Community Economic Development, Employment and Spending

COMPLETED

Principal Investigator(s):
Dr. Devajyoti Deka

Institution(s):
Rutgers University

Sponsor(s):
New Jersey Department of Transportation (NJDOT)
University Transportation Research Center (UTRC)

This research involved a review of literature; interviews with stakeholders; focus groups; and surveys of NJCL riders, hockey spectators, concert goers, and bus riders. The focus groups pertained only to the NJCL, whereas the interviews and surveys pertained to all three markets. While local economic benefits from the transit users' expenditures were estimated for all three transit markets, the environmental and congestion-reduction benefits were estimated for the NJCL service and the transit service to the Prudential Center, but not for the Wildwood/Cape May express bus service because of the modest number of bus riders. The R/ECONTM Input-Output model developed by Rutgers University was used for the estimation of local economic benefits for all three transit markets. The model results showed a significant contribution to the local economies from the transit users' expenditures in all three markets, including the creation of a large number of jobs and the generation of large amounts of earnings, state taxes, and local taxes. Analyses showed a significant contribution of the NJCL and transit services to the Prudential Center in reducing vehicle miles traveled (VMT), greenhouse gas (GHG) emissions, and traffic volumes on regional and local roads.

Access the full report at:
www.utrc2.org/sites/default/files/pubs/Final-Assessing-Travel-Behavior.pdf

Designing, Developing, and Implementing a Living Snow Fence Program for New York State

COMPLETED

Principal Investigator(s):
Dr. Timothy A. Volk

Institution(s):
The College of Environmental Science and Forestry, SUNY

Sponsor(s):
New York State Department of Transportation (NYSDOT)
University Transportation Research Center (UTRC)

This project provided technology transfer for LSF through the creation and dissemination of training materials, and combined classroom and field training workshops on LSF design and installation/maintenance held at four New York State Department of Transportation (NYSDOT) residencies around the state. Four willow LSF were installed at known blowing snow problem areas as part of the training workshops.

Access the full report at:
www.utrc2.org/sites/default/files/FinalReport-Living-Snow-Fence-Program-NYS.pdf

Impact of Polymer Modification on Mechanical and Viscoelastic Properties

COMPLETED

Principal Investigator(s):
Dr. Yusuf Mehta

Institution(s):
Rowan University

Sponsor(s):
University Transportation Research Center (UTRC)

This study was initiated with the aim of evaluating the relative impact of different cross-linking agents on the rheological and morphological properties of polymer modified asphalt binders (PMAs). To complete this objective, two cross-linking agents (an aromatic oil and silicon oxide) were selected for evaluations. Based on the results obtained, it was found out that the addition of the Aromatic Oil agent might result in increasing the potential for rutting, decreasing the potential for low temperature cracking, and helps in improving the interlocking between the polymer modifier and the neat binder.

Access the full report at
www.utrc2.org/sites/default/files/Final-Polymer-Modification-Viscoelastic-Properties.pdf

Analysis of Environmental and Infrastructure Impacts of Transportation Activities Associated with High Volume Horizontal Hydraulic Fracturing Operations in the Marcellus Shale Formation Using the Geospatial Intermodal Freight Transport (GIFT)

COMPLETED

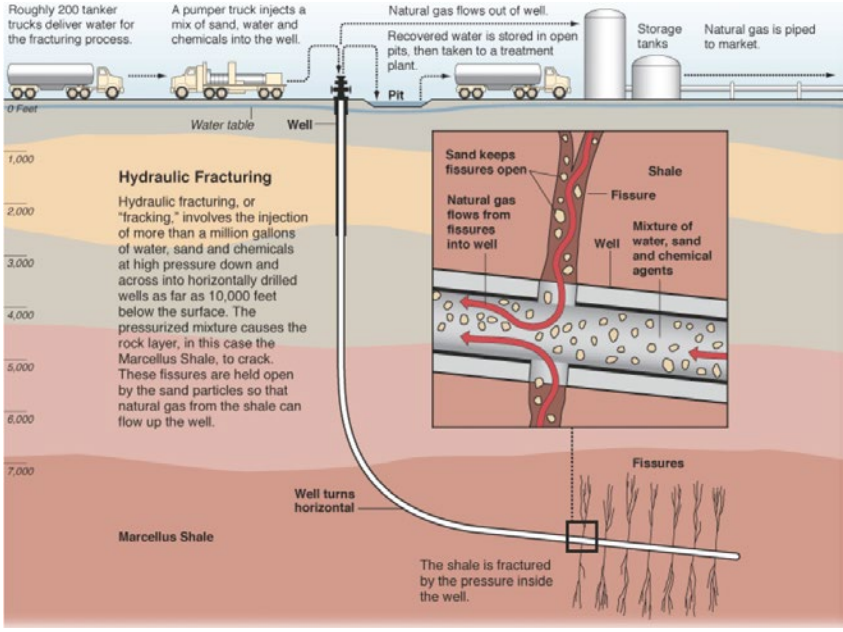
Principal Investigator(s):
Dr. Karl Korfmacher,
Dr. Scott Hawker,
Dr. James Winebrake

Institution(s):
Rochester Institute of Technology

Sponsor(s):
University Transportation Research Center (UTRC)

The researchers analyzed the environmental impacts of transporting sand and water to and waste from well sites in 2011, providing a series of assessments of truck traffic on area roads by road segment, and assessing potential pollution impacts on communities by calculating emission loads, energy usage, and operating costs using the Geospatial Intermodal Freight Transport (GIFT) model within ArcGIS Network Analyst. By using the wells, resource supply areas, and waste disposal facilities as a series of origin and destination (OD) pairings, probable transportation routes were generated and combined with estimated vehicle counts, based on the volume of materials transported and well locations.

Access the full report at
www.utrc2.org/sites/default/files/pubs/Analyis-of-Environmental-and-Infrastructure-Impacts.pdf



Overview of horizontal hydraulic fracturing process, with several transport components highlighted

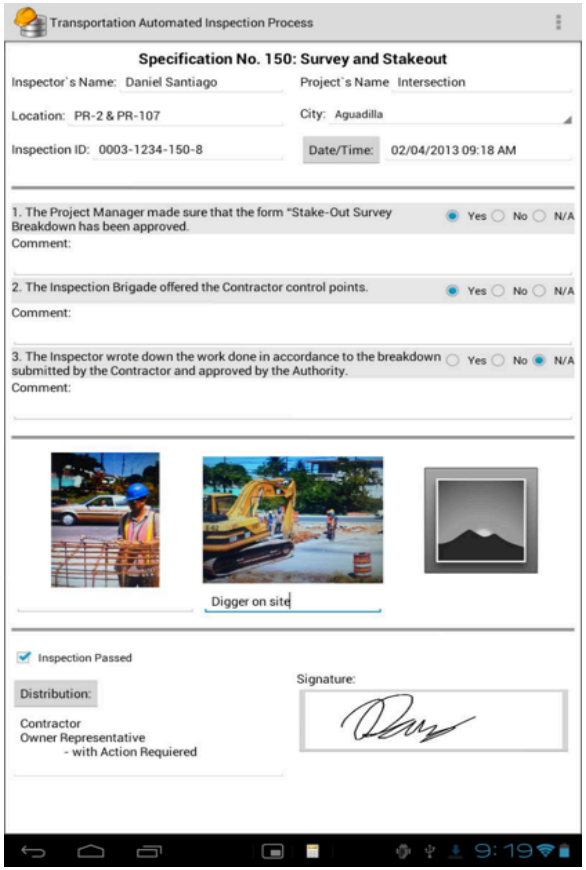
Using Mobile Computers to Automate the Inspection Process for Highway Construction Projects

COMPLETED

Principal Investigator(s):
Didier Valdes & Dr. José L. Perdomo

Institution(s):
University of Puerto Rico, at Mayaguez

Sponsor(s):
University Transportation Research Center (UTRC)



This report communicates the research findings of the development of a mobile computing application for automating the collection process of field inspection data using iPADs or Android Tablets.

The use of this application results in a more efficient data collection process, and faster transfer of information between the parties in a highway construction project, therefore improving the current communication process. After the application was developed, the research team tested it in several highway construction projects, and positive feedback was received from the users of the application.

Access the full report at:
www.utrc2.org/sites/default/files/pubs/Automate-Inspection-Highway-Construction-Projects.pdf

Port Resilience: Overcoming Threats to Maritime Infrastructure and Operations from Climate Change

COMPLETED

Principal Investigator(s):
Dr. Thomas H. Wakeman III

Institution(s):
Stevens Institute of Technology

Sponsor(s):
University Transportation Research Center (UTRC)

The objective of this research is to move from the aspirational concept of resilience to a standardized framework for creation of resilience in ports and transportation systems by integrating physical infrastructure and social systems. It takes a fully functioning maritime and shore-side distribution system for successful supply chain operations. A combination of stakeholder interviews and workshops provided insights into the resilience processes. It was discovered that every coastal community is unique and typically has its own plans. The same can be said of their coastal ports as well as the individual supply chain service providers associated with those ports.

Access the full report at:
www.utrc2.org/research/projects/port-resilience-overcoming-threatsConstruction-Projects.pdf

The Economy of Preventive Maintenance of Concrete Bridges

ACTIVE

Principal Investigator(s):
Dr. Riyad S. Aboutaha

Institution(s):
Syracuse University

Sponsor(s):
University Transportation Research Center (UTRC)

A cost-effective bridge is a bridge whose maintenance is based on its chemical condition over it's entire service life. If deterioration mechanisms are prevented, a bridge would cost considerably less to maintain and safely serves its full design service life, if not longer. The current practice for physical evaluation and delayed maintenance of deteriorated concrete bridges is fundamentally wrong. The current inspection manuals are primarily focused on detecting physical damage in concrete bridge elements. If no physical damage is detected, very minimal maintenance actions are taken. This is the main reason why the number of US bridges that are classified structurally deficient is on the rise. Given the need for future expansion of the US transportation network and increase in number of new bridges, there is a need for cost-effective maintenance process that prevents deterioration mechanism from starting, or at least stops it at a very early stage.

Characterizing Highway Corridor Length to Evaluate Travel Time Reliability using Probe Vehicle Data

ACTIVE

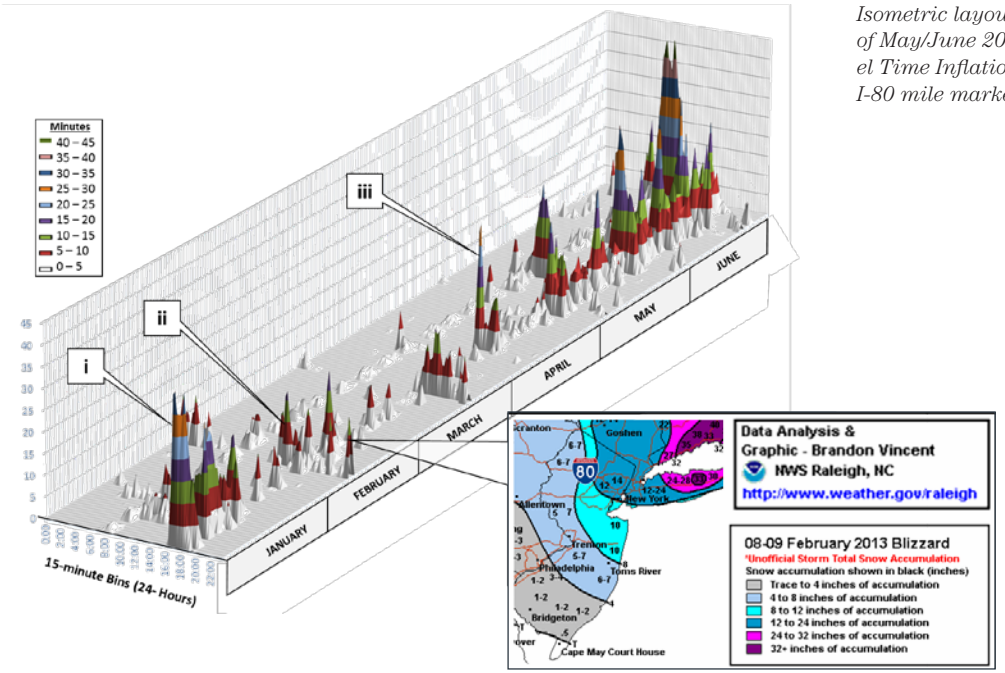
Principal Investigator(s):
Dr. Thomas M. Brennan Jr

Institution(s):
The College of New Jersey (TCNJ)

Sponsor(s):
University Transportation Research Center (UTRC)

Anonymous probe vehicle data are currently being collected on major interstates and arterials throughout the United States. Probe data are used to assign average speeds to pre-define roadway segments of varying lengths. These segments are known as Traffic Message Channels (TMCs).Through the analysis of this probe data for each TMC, transportation agencies have been making progress in the development of agency wide performance measures to better plan and manage spatially distributed infrastructure assets (1, 2). One widely accepted performance measure is travel time reliability, which is calculated along a series of TMC segments that collectively makes up a corridor. When consistent travel times are not achieved, due to incidents or recurring periods of congestion, it is desirable to understand the time and frequency of these increased travel time incidents to better manage the system.

For more information, please visit the project's webpage at
www.utrc2.org/research/projects/highway-corridor-length



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

Alkali Silica Reaction (ASR) In Cement Free Alkali Activated Sustainable Concrete

COMPLETED

Principal Investigator(s):
Dr. Sulapha Peethamparan

Institution(s):
Clarkson University

Sponsor(s):
University Transportation Research Center (UTRC)

This report summarizes the findings of an experimental investigation into shrinkage, and the mitigation thereof, in alkali-activated fly ash and slag binders and concrete. The early-age (chemical and autogenous) and later-age (drying and carbonation) shrinkage of sodium silicate-activated fly ash and slag binders was evaluated in accordance with relevant specifications. The influence of activator concentration and water content on the resulting shrinkage was investigated. The shrinkage behavior of alkali-activated binders and concrete was compared to that of ordinary portland cement. Finally, the effectiveness of several common shrinkage-mitigation techniques on the early-age and later-age shrinkage of alkali-activated binders was evaluated.

For more information,
please visit the project's webpage at
www.utrc2.org/research/projects/alkali-silica-reaction

Characterization and Modeling of Photon Absorption in Asphalt Materials for Improved Accuracy and Consistency of Nuclear Density Measurement

COMPLETED

Principal Investigator(s):
Dr. Huiming Yin and Dr. Qian Wang

Institution(s):
Columbia University and Manhattan College

Sponsor(s):
University Transportation Research Center (UTRC)

The goal of this project is to improve the accuracy and consistency of the nuclear test methods in asphalt pavement construction through decoupling the attenuation effect of electrons of hydrogen and other types of atoms. The developed technology together with the new hardware will be released and produce national and international impact on asphalt pavement construction.

For more information,
please visit the project's webpage at
www.utrc2.org/research/projects/characterization-and-modeling-photon-absorption

Illustrations of Core Sample Test and Nuclear Test Methods: (a) Coring; (b) Coring hole, and; (c) Nuclear gauge

Requirements, Model And Prototype For A Multi-Utility Locational And Security Information Hub

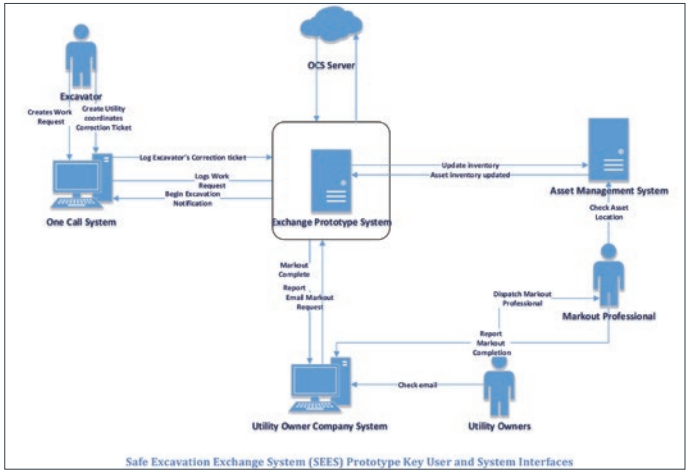
ACTIVE

Principal Investigator(s):
Dr. Fadi A. Karaa

Institution(s):
New Jersey Institute of Technology

Sponsor(s):
University Transportation Research Center (UTRC)

Even if they are hosted in sophisticated GIS systems, the asset management systems maintained by various utilities are often plagued by information incompleteness and inaccuracy. The locational information is often based on approximate design data that differ from actual "as-built" drawings that may not be even be held by such utilities owning and maintaining underground lifeline infrastructure systems (water, wastewater, electric/power, gas, storm-water, and communications networks).



Safe Excavation Exchange System (SEES) Prototype Key User and System Interfaces

This project lays the foundation for building an exchange hub for locational and security data and risk assessment of potential excavation work. It acts primarily at 2 stages: upstream of the mark-out process, as a decision to support tool to help streamline, improve and guide the mark-out to gain and preserve information gained from such field verified data, and added intelligence to each utility asset management system related to the potential proximity of other utilities, and possible criticality of proposed construction activity in a given site that puts at risk key assets.

For more information, please visit the project's webpage at
www.utrc2.org/research/projects/multi-utility-locational-and-security-information

Suburban Poverty, Public Transit, Economic Opportunities, and Social Mobility-Rae Zimmerman, NYU

ACTIVE

Principal Investigator(s):
Dr. Rae Zimmerman

Institution(s):
New York University

Sponsor(s):
University Transportation Research Center (UTRC)

This research project has two main goals. The first goal is to identify a number of metropolitan areas in UTRC Region II where demographic trends of increasing suburbanization of the poor are taking place and to use them to assess whether current transportation supply is likely to meet the needs of these communities for transit service demand. The second goal addresses risks that vulnerable communities face during extreme weather events due to lack of access to transportation for evacuation or for emergency preparedness and the ability to regain access to jobs.

For more information, please visit the project's webpage at
www.utrc2.org/research/projects/public-transit-economic-opportunities

Analysis of Curved Weathering Steel Box Girder Bridges in Fire

ACTIVE

Principal Investigator(s):
Reeves Whitney

Institution(s):
Manhattan College

Sponsor(s):
University Transportation Research Center (UTRC)

Bridge fires can present a severe hazard to the transportation infrastructure system. In fact, a nationwide survey by the New York State Department of Transportation (NYSDOT) has shown that fires have collapsed approximately three times as many bridges as earthquakes. Bridge fires are often intense as they may be fueled by gasoline from vehicles that have crashed in the vicinity of the bridge. Additionally, code recommendations and guidelines for fire protection of bridges are lax. The work described in this proposal is part of a larger testing program to investigate the behavior of curved weathering steel box girder bridges subject to fire loading.

For more information, please visit the project's webpage at
www.utrc2.org/research/projects/analysis-curved-weathering-steel-box

NYMTC Post-Processor Software Development

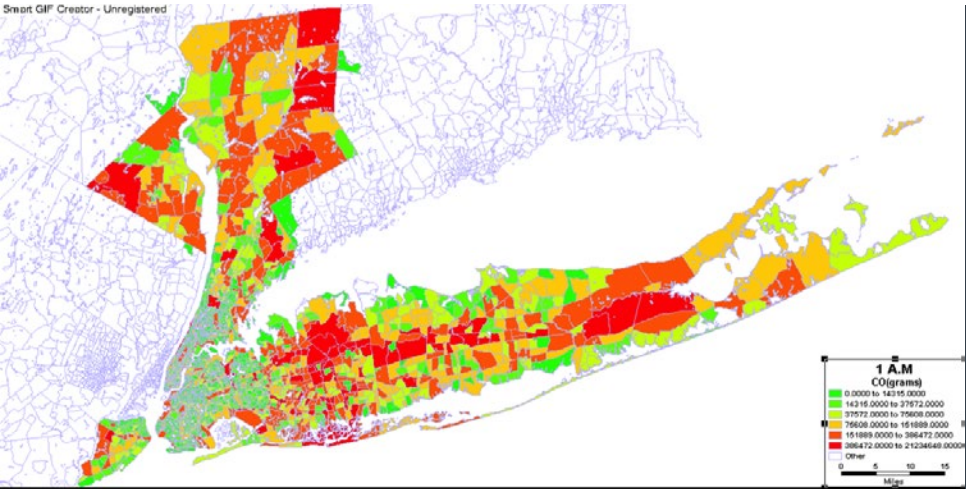
ACTIVE

Principal Investigator(s):
Dr. Huaizhu (Oliver) Gao

Institution(s):
Cornell University

Sponsor(s):
University Transportation Research Center (UTRC)
New York Metropolitan Transportation Council (NYMTC)

This proposed study consists of a phased approach involving fourteen integrated tasks for the development of NYMTC post-processor software--next generation grid-based transportation emissions inventory estimation using BPM and EPA's new MOVES model. The study will be the first comprehensive post-processor development for NYMTC that incorporates the most up-to-date advancements in experimental and analytical tools for accurate estimation of transportation emissions inventory. The resulting models and tools will provide rich and reliable information to characterize transportation emissions, air quality impacts, and public health implications, facilitate demonstrations and evaluations of environmental benefits from regional transportation plans and transportation improvement programs, and provide enhanced factual information and scientific understanding of various transportation strategies that can be used for future policy making in NYS and for comparisons across the country.



Beyond Conformity Analysis: Using GIS software, PPS can perform various kinds of analysis at both the regional and local level

For more information, please visit the project's webpage at
www.utrc2.org/research/projects/nymtc-post-processor-software-development

Traffic Prediction using Wireless Cellular Networks

ACTIVE

Principal Investigator(s):
Dr. Sabiha Wadoo

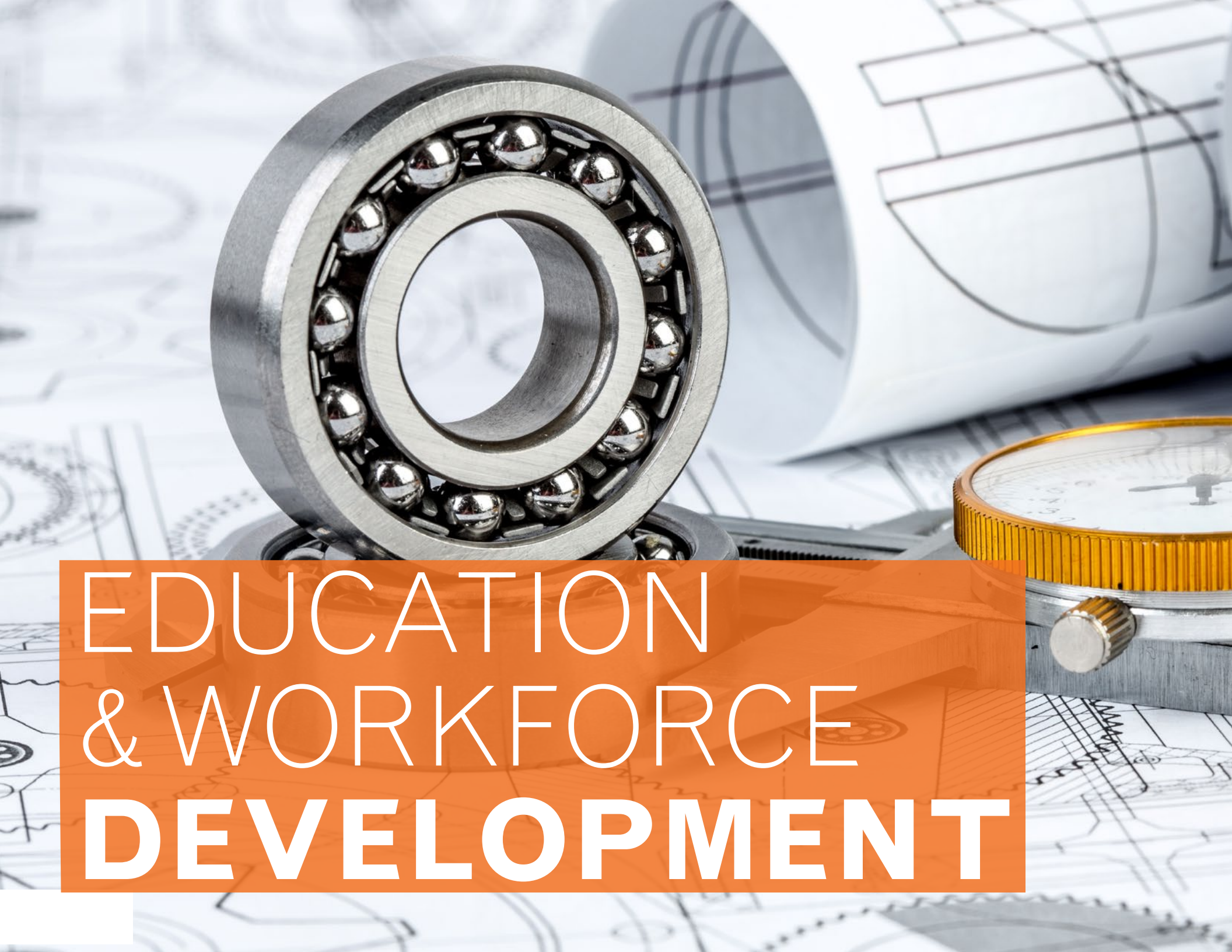
Institution(s):
New York Institute of Technology (NYIT)

Sponsor(s):
University Transportation Research Center (UTRC)

The major objective of this project is to obtain traffic information accurately from existing wireless infrastructure. In this project freeway traffic will be identified and modeled using data obtained from existing wireless cellular networks. Most of the previous research on freeway traffic control assumes the availability of traffic parameters like vehicle velocity and density. Such data is available only at a few locations on major highways where sensor nodes have been pre-deployed. In practical terms, to build a comprehensive network of sensors for this purpose is prohibitive in terms of the cost involved. However, an existing cellular network of a large wireless provider can be used for collecting traffic parameter information. As mobile devices have become very common, these devices can not only provide traffic parameter data but can also be used to receive real time traffic information using mobile applications.

Data Points Collected using G-MON App during Drive Test

For more information, please visit the project's webpage at
www.utrc2.org/research/projects/traffic-prediction-using-wireless-cellular-networks



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-2015-16 AWARDS

The September 11th Memorial Program Academic Initiative entered its tenth year of the program in September 2015. The New York Metropolitan Transportation Council (NYMTC) established the September 11th Memorial Program for Regional Transportation Planning to honor the memory of Ignatius Adanga, Charles Lesperance, and See Wong Shum, the three employees it lost during the attack on the World Trade Center. The program was established to educate and motivate people interested in transportation technology and planning and to encourage innovations in planning activities throughout the NYMTC region.

In August, a selection committee comprised of representatives from NYMTC and its members awarded two students with internship positions for the 2015 – 2016 academic year. The awardees included:

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

Internship Supervisor – **Lynee Thisse**, NYMTC

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

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

Sabiheh Faghih is a PhD student in Transportation Engineering, at City College of New York. Her internship is with NYMTC and she works closely with NYMTC Technical Group to help to identify and overcome "Challenges of Conducting Surveys for Activity-Based Travel Demand Models". The three important surveys that are considered to use for data collection are Household travel survey, Establishment survey and Visitor survey. This project needs to focus more on identifying the resources - including staffing, budget and sample sizes– that will be realistic but robust for these travel surveys in the NYMTC region so that the data collected can be properly integrated into the activity-based models. Ms. Sabiheh Faghih is working with staff at the Technical Group at NYMTC. Her academic adviser is Prof. Camille Kamga at the City College of New York and Director of UTRC

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

Di Liu, Candidate in Masters Program of Public Administration at NYU

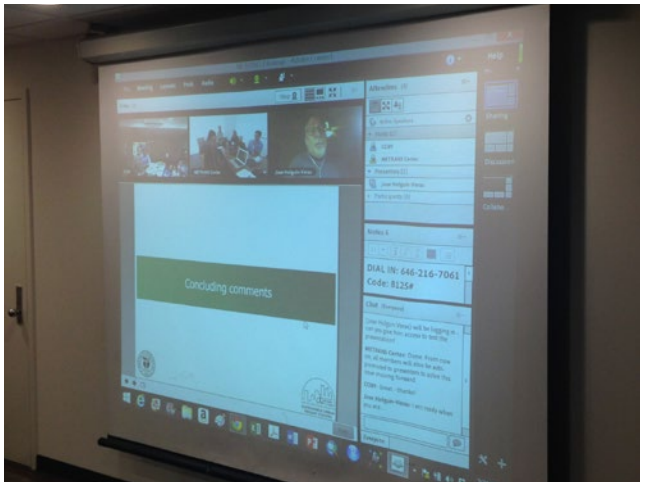
Internship Supervisor: **Jan Khan**, NYMTC

Faculty Adviser: **Zhan Guo**, Ph.D., Professor of Urban Planning and Transportation Policy, Wagner Graduate School of Public Service at New York University

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

Di Liu, a second-year Master's of Public Administration student with a concentration in policy, has been interning at NYMTC to develop an action plan to link environmental and transportation planning. Ms. Liu received her dual Bachelor's degree from Peking University in Beijing, China, majoring in English Literature and Economics. During undergraduate study, Ms. Liu has interned and conducted policy researches at various central Chinese government agencies, including the National Development and Reform Commission, Development Research Center of the State Council, and State-owned Assets Supervision and Administration Commission. With a strong interest in energy and environmental policies and international relations, Ms. Liu looked into issues like energy security, energy geopolitics, power sector reform, and renewable energy policy through her internship and researches. She is working with staff at the Planning Group at NYMTC to write a guidebook addressing environmental issues in the transportation planning process of New York City, Long Island and Lower Hudson Valley during her stay at NYMTC. Ms. Liu is working with staff at the Planning Group at NYMTC. Her academic adviser is Professor Zhan Guo at the Robert F. Wagner Graduate School of Public Service at New York University.

CCNY OFFERED A GRADUATE COURSE ON URBAN FREIGHT AND CITY LOGISTICS



In Spring 2015, the City College of New York offered an innovative new graduate level course in Urban Freight and City Logistics. This course was developed as a joint effort by several faculty from MetroFreight, a Volvo Research and Education Foundations (VREF) Center of Excellence in Urban Freight led by the Metrans Transportation Center at the University of Southern California and California State University, Long Beach with partners including IFFSTAR in Paris, the Korea Transportation Institute (KOTI) in Seoul, and the University Transportation Research Center (UTRC) in New York.

Drawing on the expertise of faculty in geography, urban planning, and civil engineering, the course provides a comprehensive introduction to the emerging multidisciplinary field of city logistics. Building from an initial course outline developed by Dr. Jean-Paul Rodrigue of Hostra University, the course was piloted by Dr. Alison Conway, an Assistant Professor of Civil Engineering at CCNY between the campuses of CCNY and the University of Southern California.

The course included senior undergraduate, masters, and PhD students from the CCNY Department of Civil Engineering and from USC's Price School of Public Policy. Dr. Conway's CCNY classroom was connected in real time via video to a classroom at USC, where student progress was overseen by Dr. Genevieve Giuliano, the Director of MetroFreight. This format allowed for direct interaction between the students and faculty from both cities and disciplines, enabled multi-faceted discussion of urban freight challenges in the United States' two largest cities. The class also featured guest lectures from national experts including Dr. Rodrigue, Dr. Qian Wang of the State University of New York at Buffalo, and Dr. Jose Holguin-Veras of the VREF Center of Excellence for Sustainable Urban Freight Systems (SUFS) at Rensselaer Polytechnic Institute.

The course will be taught again in Spring 2017, after which the course materials will be made publicly available for use by any interested faculty teaching in related programs.

UTRC AWARDS 2015 AITE SCHOLARSHIPS

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

Eight scholarships were awarded in 2015. Information on the 2015 AITE Scholarship recipients is provided below.

Anita Ahmed, New York University

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

Eamonn Grant,
New York University

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

Kievel Hall, New York University

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

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

Md Irfanul Mostafa,
City College of New York, CUNY

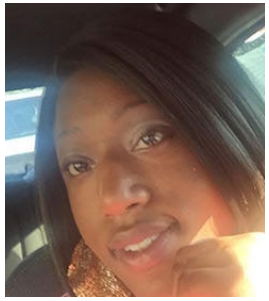
Md Irfanul Mostafa is currently working in New York State Department of Transportation and is pursuing a Master's degree in Civil Engineering at The City College of New York.
As a member of the Traffic, Safety and Mobility unit in NYSDOT, his most important career goal is to continue making contributions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

Katie O'Sullivan,
University at Albany, SUNY

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

Matthew Rosenbloom-Jones,
University at Albany, SUNY

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



Monique Thompson,
New York University

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

Shenuque Tissera,
Hunter College, CUNY

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

ROBERT THOMAS FROM CLARKSON UNIVERSITY RECOGNIZED AT THE 2015 CUTC ANNUAL BANQUET

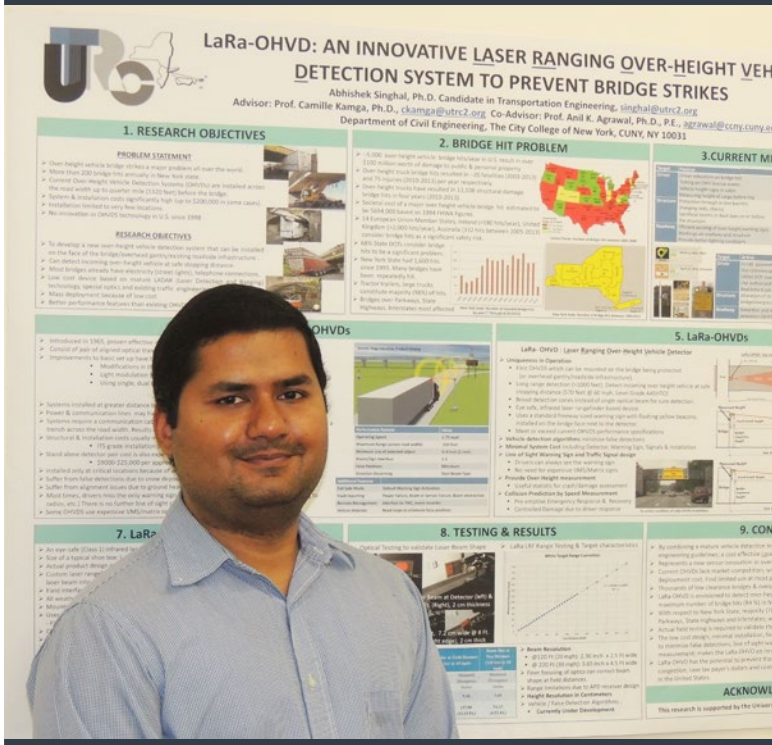
Robert Thomas from Clarkson University, winner of the UTC Region 2 Outstanding Student of the Year, was recognized at the CUTC Annual Awards banquet held on January 2015 in Washington, D.C.

Robert Thomas is a PHD candidate in the department of Civil and Environmental Engineering at the Wallace H. Coulter School of Engineering at Clarkson University. Robert received his bachelor's degree in 2011 from Clarkson University and continued his study there under the supervision of Professor Sulapha Peethamparan for his master's degree in 2013, and currently for his PhD. His dissertation is on the mechanical properties and durability of alkali-activated Portland-cement-free concrete. As this sustainable binder becomes more and more prevalent, Robert hopes that his research will provide practical results explaining the mechanical and durability behavior of alkali-activated concrete. Robert's goal is to present results which will directly inform engineers in the design of alkali-activated sustainable concrete structures.

Robert Thomas *Receiving the Award at the 2015 CUTC Annual Banquet from* ***Shashi Nambisan****(L); CUTC President and* ***Gregory Winfree****(R), USDOT OST-R'S Assistant Secretary*

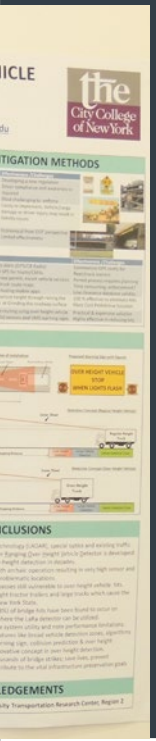
Robert is also very engaged in the Clarkson University community; he is the president of the Clarkson Graduate Student Associate, helps plan Clarkson's annual Graduate Research Symposium, administers the campus bike share program, is a member of the campus Sustainability Committee, and helps with the ASCE Concrete Canoe team. He has also garnered valuable teaching experience as a graduate student, instructing students in laboratory, classroom, and distance learning environments.

UTRC SUPPORTED THE 2015 ITS-NY BEST STUDENT PAPER ESSAY AWARD



UTRC supported the 2015 ITS-NY Best Student Paper Essay award. This year's winner is Abhishek Singhal, a Ph.D. stdent at the City College of New York, CUNY. The winner was recognized at the ITS-NY 22nd Annual Meeting and Technology Exhibition in Saratoga Springs, NY, held on June 11-12, 2015. His winning essay entitled, "LaRa – OHVD: An Innovative Over-Height Vehicle Detection System to Protect our Bridges to Prosperity" has been selected as the Winner of the ITS-NY 2015 Best Student ITS Paper Competition. The paper describes a new over height

vehicle sensor designed and developed by Mr. Singhal as part of his doctoral research which combines concepts from traffic, optical, and electrical engineering to detect fast moving over height vehicles.

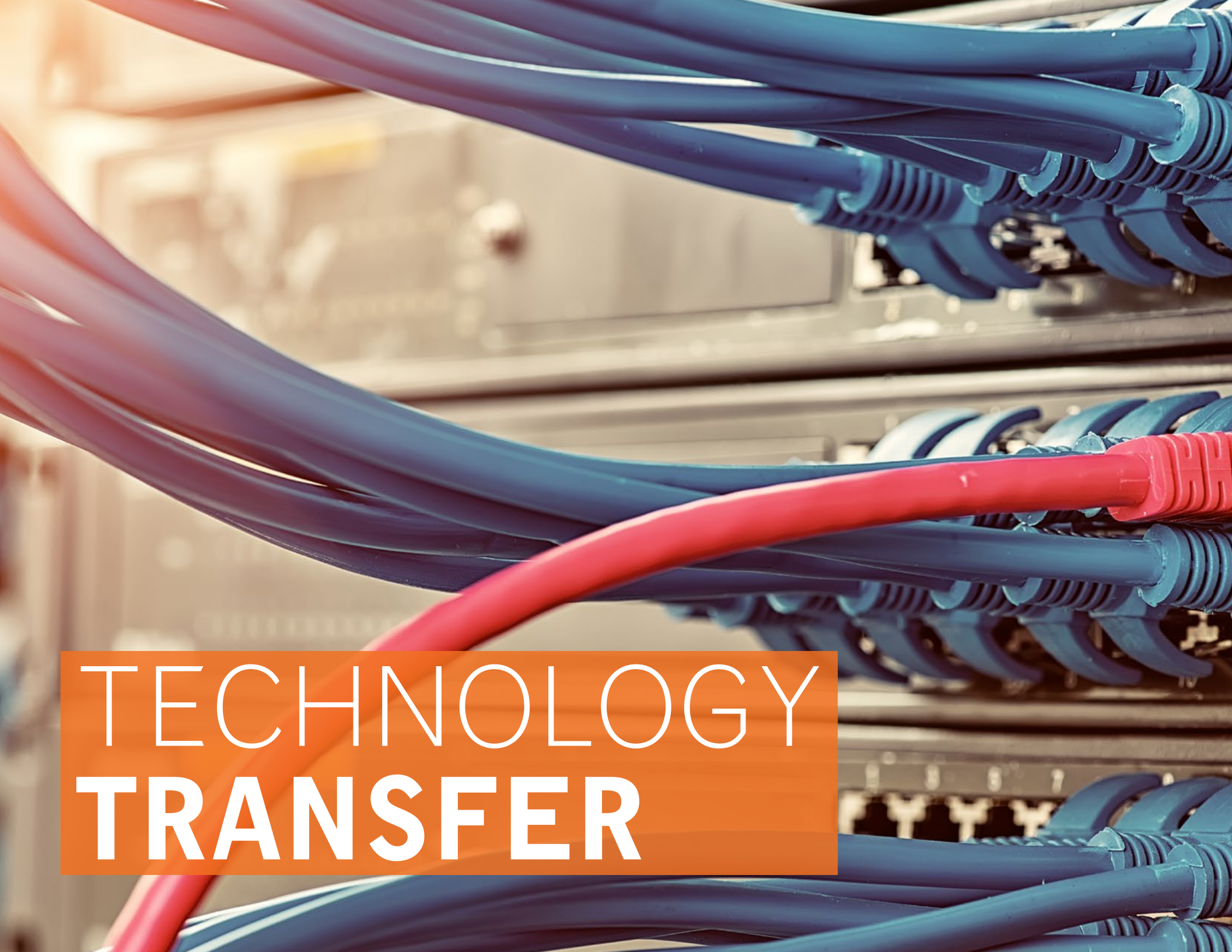


Mr. Singhal, currently a Ph.D. student (specializing in Transportation Engineering) in the Department of Civil Engineering at City College of New York, is also a Research Assistant at the Region 2 University Transportation Research Center. Mr. Singhal holds a M.S. in Electrical Engineering from CUNY and B.S. degree in Electronics Engineering from Pune University in India. He works with Dr. Camille Kamga and Dr. Anil Agrawal at the City College of New York. His research interests are in the area of Intelligent Transportation Systems, System Engineering, Smart Cities, Sensors, Analysis of Big Transportation data like GPS taxicab records, Public Transit, Sensors, and Transportation Safety & Policy. He has six refereed journal publications, along with several others under review, and other refereed conference proceedings. Mr. Singhal will graduate in February, 2016.

UTRC SUPPORTED THE 2015 WTS'S LEONARD BRAUN MEMORIAL GRADUATE SCHOLARSHIP

The 2015 Leonard Braun Memorial Graduate Scholarships was awarded to Alexandra Gore. Alexandra Gore is pursuing a Master of Science in Transportation Planning and Engineering from the Polytechnic School of Engineering at NYU. She is expected to graduate in May 2016. She is also employed by WSP/Parsons Brinckerhoff, New York as a traffic engineer and has an interest in transportation policy. Ms. Gore has demonstrated strong leadership skills, having served as Lead of the 2015 Summer Internship Program for Parson Brinckerhoff's New York City Office where she collaborated between human resource managers, department managers, and the applicant pool. She is also an active member of PB's Professional Growth Network, WTS, and ITE. She enjoys the transportation engineering profession, viewing each project as unique and an opportunity for balance between "classic critical analysis and thinking outside of the box for creativity and design."

***Alexandra Gore**, (L) 2015 WTS's Leonard Braun Memorial Graduate Scholarship Recpient and **Penny Eickemeyer** (R), Associate Director for Research, UTRC*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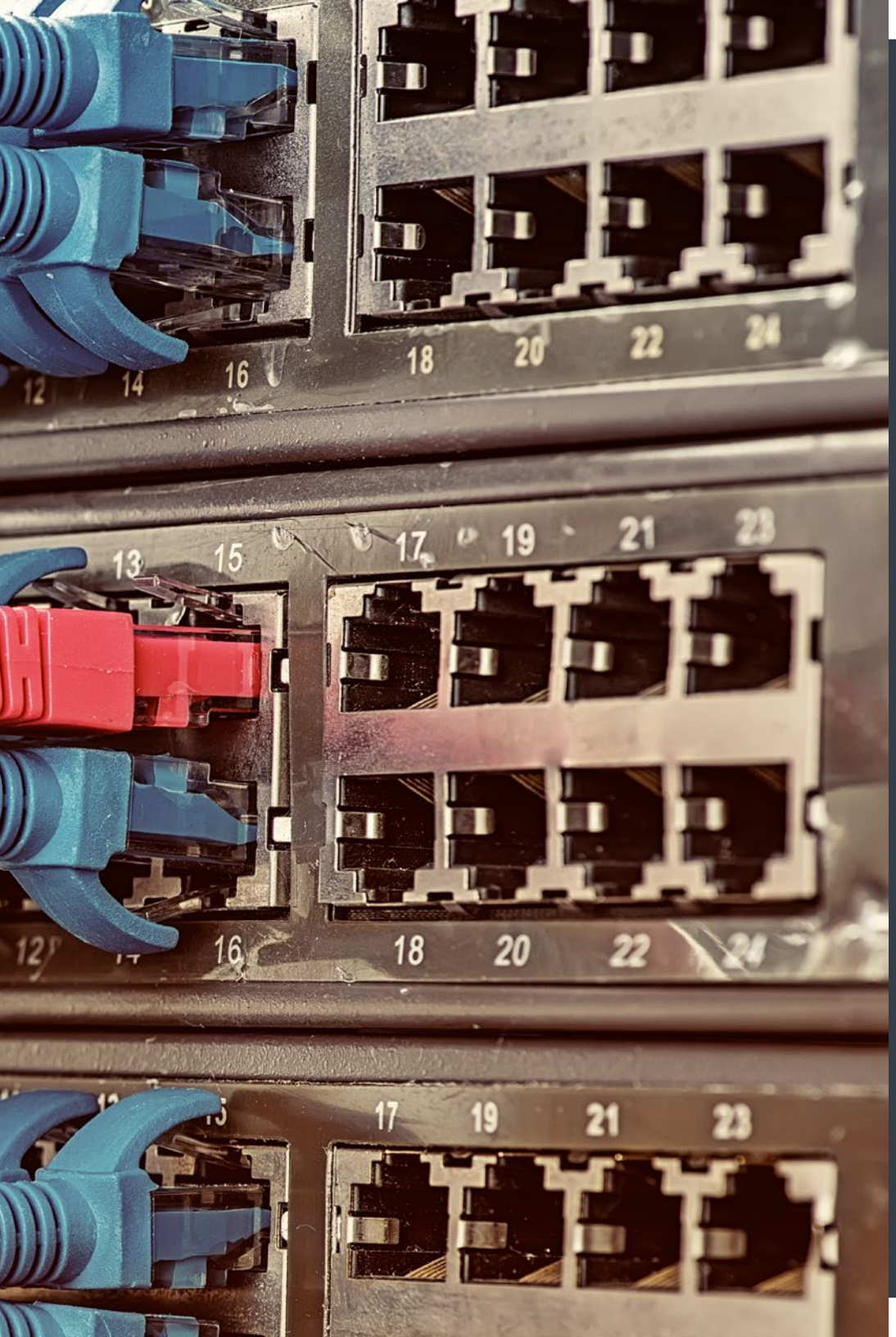


UTRC's Technology Transfer program goes beyond what might be considered traditional .

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 AT TRANSPORTATION RESEARCH BOARD **94TH ANNUAL MEETING**

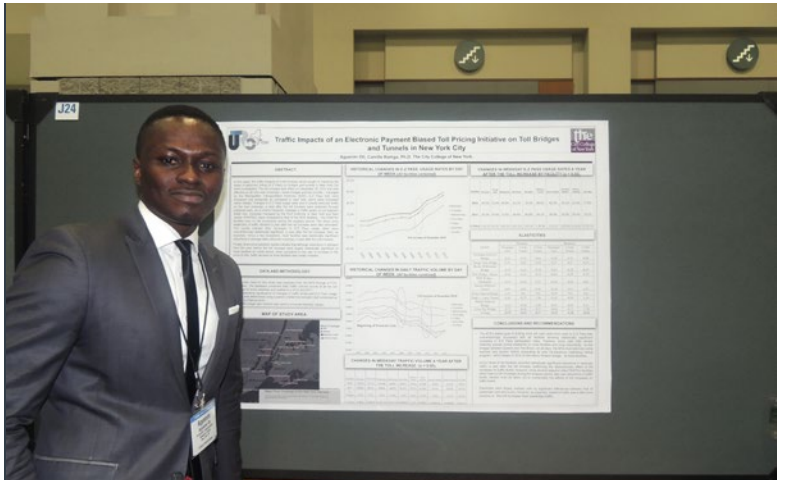
January 11-15, 2015 at Washington, DC

UTRC staff and consortium students and faculty participated in the 94th Transportation Research Board Meeting held from January 11 – 15, 2015 in Washington, DC. There were more than 150 papers and presentations presented by UTRC researchers at TRB covering all modes of transportation.

UTRC has compiled a compendium of our Researcher's Presentations & Papers for 201 TRB Annual meeting available online at
www.utrc2.org/publications/utrc-trb- 2015-compendium

UTRC Group (with friends) Photo at the CUTC Annual Awards Banquet, Washington, DC

Sabiheh Fagih *(L), Ph.D. Student and* ***Dr. Camille Kamga*** *(R), UTRC Director, Presenting a Poster at the 94th TRB Annual Meeting*



Oti Agenim*, UTRC Research Assistant Presenting a Poster at the 94th TRB Annual Meeting*

UTRC AT THE UNIVERSITY OF PUERTO RICO'S **2015 TRANSPORTATION WEEK**

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

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

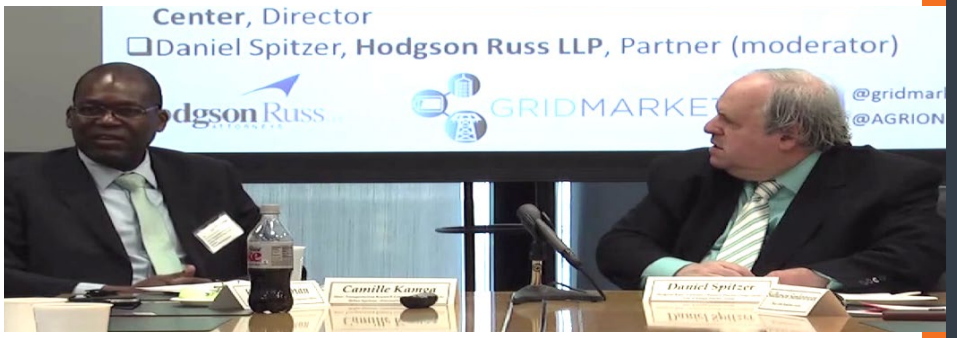
The Student Chapter of the Institute of Transportation Engineers at the University of Puerto Rico-Mayagüez Campus celebrated the Annual Transportation Week on March 17-19, 2015. Transportation Week provided an opportunity for the students, faculty, and transportation professionals to join together for greater awareness and appreciation of the transportation sector. The ITE Student Chapter organized various events to celebrate the UPR-Mayaguez transportation program. Dr. Camille Kamga and Dr. Robert Paaswell represented UTRC at the ceremonies. They met with students, shared their experience as transportation professionals and gave lectures at a full-occupied auditorium.

Dr. Didier Valdes and Dr. Benjamin Colucci organized meetings and visits with Puerto Rico's transportation Agencies at San Juan. Meetings were held with the Secretary of the Department of Transportation and Public Works of Puerto Rico and executives from the Highway and Transportation Authority (ACT) and the Metropolitan Bus Authority (AMA). During these meetings, UTRC and the representatives of the transportation agencies discussed ways to work together on critical transportation problems and to provide opportunities for students to get involved on projects performed by the Department of Transportation and Public Works of Puerto Rico.

DR. CAMILLE KAMGA, UTRC DIRECTOR, PRESENTED AT THE **ARGION'S EVENT** ON "ACCELERATING THE TRANSPORTATION INFRASTRUCTURE: THE FUTURE OF AUTONOMOUS VEHICLES"

April 30, 2015, New York City

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



Dr. Camille Kamga*(L); UTRC with the Panel Moderator;*
Daniel Spitzer*(R), Hodgan Russ LLP*

The panel discussed and addressed the following questions:

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

The event video is available at this link:
www.youtube.com/watch?v=FuxWJwIzOWI

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

May 8, 2015 at the New York Institute of Technology

UTRC, in collaboration with Regional Plan Association, organized a conference on "Investing in an accessible New York: A Conference on Public Transportation and New York's Future" that was held on May 8th, 2015 at the New York Institute of Technology.

The event convened the nation's transportation leaders and aimed to discuss how New York City's transit network has shaped the city we know today and the role that transit investments will play in New York's future. New York City is home to the country's most expansive public transportation network, with 14 million people, seven million workers and a $1.4 trillion economy relying on its buses, subways and commuter trains every day. Just as this transit network has shaped what the city has become over the past century, the investments we make today will determine New York City's global competitiveness, affordability and economic development for generations to come.

The event was attended with more than 250 participants. More information about the event is available at this link:
utrc2.org/events/NYC-Transportation-Investment

From L to R: ***Joshua Schank****; Eno Center for Transportation,* ***Mortimer Downery****; Washington Metropolitan Transit Authority, and* ***Emil Frankel****; Assistant Secretary for Transportation Policy, USDOT 2002-2005, Senior Fellow of Eno*

Dr. Camille Kamga*, UTRC Director*

From L to R: ***Matthew W. Daus****; UTRC Distinguished Lecturer,* ***Jonathan Peters****; CUNY,* ***David King****; Columbia University,* ***Peter Derrick****; Transit Historian*

Dr. Robert E. Paaswell*, moderating a panel at the event*

Beverly Scott
CEO, Beverly Scott Associates, LLC

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

June 30, 2015, NYIT Auditorium on Broadway

UTRC hosted a summit on June 30, 2015 at the SUNY Global Center in New York City. The event's speakers' discussed facts and opinions from a wide variety of stakeholders, policy-makers, and academics on the current state of the NYC taxicab medallion industry, including the valuation of medallions in NYC and beyond. Also, the manner by which the for-hire vehicle industry (liveries, black cars and limousines) are coping with smartphone technology disruption was discussed. Finally, a primer or review of how NYC's handling of smartphone app regulation fares against the rest of the country were discussed, including the release of a seminal report on criminal background check best practices conducted by professors at the UTRC and John Jay College of Criminal Justice.

The Keynote Speaker was Hon. Michael Balboni, Former Deputy Secretary for Public Safety for New York State, Former New York State Senator and Chair of the New York State Senate Committee on Veterans, Homeland Security and Military Affairs.
For more information, please visit:
www.utrc2.org/events/taxi-medallion-system-and-for-hire-services

*A Group Photo with the Keynote Speaker, **Hon. Michael Balboni**, Former Deputy Secretary for Public Safety for New York State, Former New York State Senator and Chair of the New York State Senate Committee on Veterans, Homeland Security and Military Affairs.*

A Group Photo with the Conference Speakers

A Well Attended Conference at the SUNY Global Center

UTRC DIRECTOR, **DR. CAMILLE KAMGA** PRESENTED AT THE ROBOUNIVERSE CONFERENCE ON CONNECTED VEHICLES TO AUTONOMOUS VEHICLES: CHALLENGES & OPPORTUNITIES TO IMPROVE MOBILITY AND SAFETY

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

Dr. Camille Kamga, UTRC Director and Assistant Professor at the City College of New York was invited to present at the RoboUniverse Conference that was held from May 11-13, 2015 at the Javits Center, New York City. Dr. Kamga discussed and presented on the opportunities and challenges for deployment of the USDOT Connected and Autonomous Vehicles during the Driverless Cars Conference Workshop. In his presentation, Dr. Kamga mentioned that for the past decade, innovation within the automotive sector has brought major technological advances, leading to safer, cleaner, and more affordable vehicles. While the dream of an automated vehicle-highway system has been around for some time, we are finally witnessing a convergence of technologies that promise to make that dream a reality. Connected and autonomous cars will transform our lives, influencing everything from the routes we take to work to how we find the closest parking spot. What are the challengesand opportunities that these technologies will bring on our transportation system?

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

TRANSPORTATION INFORMATICS TIER I UTC HOSTS ANNUAL SYMPOSIUM: BIG DATA ANALYTICS TRANSFORMING TRANSPORTATION OPERATIONS, MANAGEMENT AND SAFETY

August 13-14, 2015 at the University at Buffalo, SUNY

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

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

***Dr. Adel Sadek**, PhD - Director of TransInfo and UB Professor of the Department of Civil, Structural and Environmental Engineering*

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

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

UTRC SPONSORED A FREIGHT WORKSHOP IN **NEW YORK CITY**, HOSTED BY RENSSELAER POLYTECHNIC INSTITUTE

September 16, 2015 at New York Institute of Technology

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

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

Click here for the agenda and presentations:
coe-sufs.org/wordpress/nycfreightworkshop/

***Dr. Jose Holguín-Veras**, Rensselaer Polytechnic Institute*

Workshop Attendees

***Robert Ancar**, NYSDOT*

*From L to R: **Charles Ukegbu**, NYCDOT; **Ryan Russo**, NYCDOT; and **Stacey Hodge**, NYCDOT*

UTRC/NYMTC SEPTEMBER 11TH MEMORIAL PROGRAM BROWN BAG SEMINAR

September 16, 2015 at NYMTC

***Ms. Dan Wan** (Left) and **Ms. Gauri Jumde** (Right) (holding NYMTC's logo) along with UTRC & NYMTC staff at the Brown Bag Seminar (Photo Credit: John Lopez, NYMTC)*

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

UTRC CO-SPONSORED THE 4TH ANNUAL INTERNATIONAL SYMPOSIUM ON PUBLIC PRIVATE PARTNERSHIPS WITH CORNELL UNIVERSITY

September 15-16, 2015 in New York City

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

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

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

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

UTRC CO-ORGANIZED THE 28TH INTERNATIONAL ASSOCIATION OF TRANSPORTATION REGULATORS (IATR) 2015 ANNUAL MEETING

September 27, 30, 2015 at Montreal, Canada

The International Association of Transportation Regulators (IATR)'s 28th Annual Conference was held on September 27-30 at the Montreal Marriott Chateau Champlain, Canada. The conference theme was " New Transportation Directions; Regulatory Resiliency, Renewal, and Regeneration.

The International Association of Transportation Regulators (IATR) is a growing peer group of taxi, limousine and for-hire transportation regulators, dedicated to improving the practice of licensing, enforcement and administration of for-hire transportation through the sharing of information and resources.

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

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

For more information on the IATR organization and its membership, please visit the website: **iatr.global**

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

OCTOBER 9, 2015 AT THE SUNY GLOBAL CENTER

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

Dr. Susan Shaheen, co-director of the Transportation Sustainability Research Center (TSRC) of the Institute of Transportation Studies at the University of California (UC), Berkeley presented at the UTRC Visiting Scholar Seminar on October 9, 2015 at the SUNY Global Center. Dr. Shaheen is also an adjunct professor in Civil and Environmental Engineering at UC Berkeley. The event explored innovation and disruption in urban mobility. There have been many new forms of mobility emerging in the urban transportation environment. This has led to increased traveler choice and controversy among the new entrants and existing service providers. Much of this can be attributed to external forces (e.g., rise in smartphones, decrease in driver's license rates, socio-demographic changes, and recent economic decline), as well as the sharing economy (access to goods and services, which are rented or loaned, in contrast to ownership). Since 2010, there have been notable changes in the shared-use mobility arena, including ongoing growth in program memberships and fleet size, new entrants, and diversifying business models. Dr. Shaheen examined trends, recent developments, and the impacts of these services. She has studied the social and environmental impacts of carsharing, bikesharing, ridesharing, and ridesourcing (e.g., UberX, Lyft, and Sidecar) in her research on shared mobility for over 15 years. She also discussed the current policy framework and how it is evolving to address these services.

More information on the event is available at this link:
utrc2.org/events/innovation-disruption-urban-mobility

UTRC AT THE 2015 **NJDOT** SHOWCASE

October 23, 2015 at The Enterprise Center at RCBC, (Rowan College at Burlington County)

UTRC students, faculty, and staff attended and participated at the 17th Annual NJDOT Research Showcase, held on October 23rd, 2014 at the Conference Center at The Enterprise Center at RCBC, (Rowan College at Burlington County). The 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.

For more information, please visit:
cait.rutgers.edu/cait/17th-annual-njdot-research-showcase

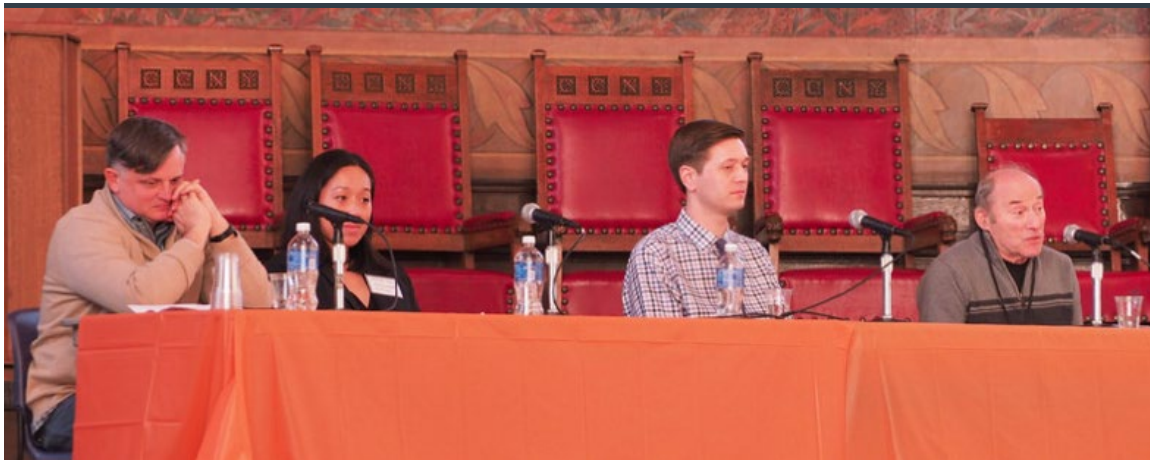
UTRC CO-HOSTED THE **TRANSPORTATIONCAMP NYC 2015**

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

The 2015 TransportationCamp NYC was held on November 14, 2015 at the City College of New York. The event was hosted by the Young Professionals in Transportation and the University Transportation Research Center.

The goal of the event was to assemble planners, software developers, engineers, students, dreamers, and professionals for an exciting day of "un-conferencing." Unlike a traditional conference, the specific session topics were determined by participants, which provided each attendee an opportunity to lead and shape the event. TransportationCamp NYC 2015 fostered an open conversation and collaboration between all parties interested in mobility and the radical changes the near-future promises in transportation.

The event was attended by more than 550 delegates.



***Dr. Robert E. Paaswell** (Far Right),*
UTRC's Director Emeritus Presenting at a Panel during the TransportationCamp NYC 2015 Event

Event Attendees

***Dr. Candace Brakewood**, CCNY Speaking at the Event*

Event Attendees

(Photos Credit: Elizabeth Paul, Metropolitan Transportation Authority)

UTRC HOSTED THE **3RD ANNUAL TRANSPORTATION TECHNOLOGY SYMPOSIUM** ON INNOVATIVE MOBILITY SOLUTIONS

November 20, 2015 at New York Institute of Technology

UTRC hosted the 3rd Annual Transportation Technology Summit on November 20, 2015 at the New York Institute of Technology. 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 and public policy-making implications. Presenters explored cutting-edge intelligent transportation systems, big data aggregation, and innovative transportation technology solutions to promote efficiency, safety, security and sustainability goals, as well as the impact on broader inter-modal and multi-modal transportation considerations. Future and forward thinking innovative concepts are encouraged, and the pragmatic political reality of various movements (such as climate change/ environmental policies and safety initiatives for reduced traffic fatalities), were analyzed to ascertain whether society is ready to keep pace with the implementation of such technology.

The introductory remarks were delivered by Commissioner Victor Calise of the Mayor's Office for People with Disabilities and NYC Council Member Ydanis Rodriguez, Chair of the Transportation Committee, New York City Council. The closing remarks were delivered by Commissioner Polly Trottenberg, New York City Department of Transportation.

The videos of all keynote addresses are available at the event's page at UTRC website: **utrc2.org/events/transportation-technology-symposium-innovative-mobility-solutions**

From L to R: ***Hon. Ydanis Rodriguez****, NYC Council Member;* ***Commissioner Victor Calise*** *of the Mayor's Office for People with Disabilities;* ***Matthew W. Daus****, UTRC Distinguished Lecturer;* ***Dr. Nada Anid****, Dean of School of Engineering and Computing Sciences,NYIT; and* ***Dr. Camille Kamga****, UTRC Director*

Keynote Speaker: Commissioner ***Polly Trottenberg****, New York City Department of Transportation*

Ernest Athanailos*, New York City Department of Transportation*

Amos Tamam*, Verifone*

UTRC CO-SPONSORED AN **NYIT EVENT**: ITS TRAVEL INFORMATION SYSTEMS & MOBILE APPLICATIONS FOR ENHANCED TRANSPORT

December 10, 2015 at NYIT

On December 10, New York Institute of Technology held the workshop "ITS Travel Information Systems and Mobile Applications for Enhanced Transportation." This workshop was sponsored by University Transportation Research Center (UTRC). More than 100 professionals in the field of transportation attended the event, including representatives from NYC DOT, NYSDOT, NJ Transit, MTA, Port Authority of NY & NJ as well as NY City Planning, consultants, engineering firms and academia.

Speakers' presentations addressed the wave of innovation in ITS and apps for mobile devices, which are transforming the way traffic and transit data are communicated to customers in real time. Some innovations are quickly adopted by end-users, in particular those focusing on vehicle technologies /software. Others require infrastructure investments and coordination with city and transportation planners before being implemented. This workshop focused on emerging technologies that increase multi-modal transport options and reduce traffic congestion, and associated emissions. Presenters highlighted emerging mobility innovations, including how they can be developed to address current transportation challenges. They discussed how innovations align with current transportation plans, and serve different constituencies, including people with special mobility needs.

The first session focusing on ITS and Optimal Travel Information Systems, was chaired by Neveen Schlayan, Ph.D., Assist. Prof. Electrical Engineering, SUNY Maritime College and featured as presenters Dr.Camille Kamga, Ph.D., Director, University Transportation Research Center and Abishek Singal (UTRC, Region 2); Emilio Sosa, PE, Acting Regional Traffic Engineer and ITS Coordinator, NYS DOT Region 10; Sabiha Wadoo, Ph.D., Professor, School of Engineering & Computing Sciences, NYIT and Anil Yazici, Ph.D., Assistant Professor, Dept. of Civil Engineering, Stony Brook U.

The second session on Mobile Applications for Enhanced Transportation was chaired by Prof. Jonathan Voris, Ph.D., Assistant Professor, SoECS, NYIT and included presentations by Shaurya Agarwal, Ph.D., Post-Doctoral Associate, Center for Urban Science and Progress (CUSP), New York University; Matthew W. Daus, Esq., Distinguished Lecturer, UTRC Region 2; and Alex Keating, Sr. Project Manager, Special Projects, NYC Department of Transportation

The workshop concluded with keynote speaker Professor Pushkin Kachroo, Ph.D., P.E., Lincy Professor, Transportation, Electrical and Computer Engineering, College of Engineering, and Director of the Mendenhall Innovation Program, University of Nevada, Las Vegas.

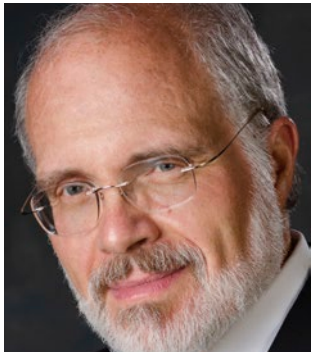
***Matthew W. Daus**, UTRC Distinguished Lecturer Presenting at the Event*

UTRC FACULTY PRESENTATIONS AT NJDOT

UTRC and NJDOT sponsored an In-House Lecture Series at the NJDOT Offices at Trenton, NJ. During the Fall 2015, 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.

SMARTPHONE-BASED TEEN DRIVER SUPPORT SYSTEM: RESULTS FROM A 300 TEEN DRIVER FIELD OPERATIONAL TEST

June 14, 2015 at NJDOT Headquarters



Dr. Max Donath,
University of Minnesota

Dr. Max Donath, Professor of Mechanical Engineering and Director of the Roadway Safety Institute at the University of Minnesota, the federally designated Region 5 University Transportation Center, presented at the NJDOT Headquarters on June 14, 2015 on the topic, "Smartphone-Based Teen Driver Support System: Results from a 300 Teen Driver Field Operational Test".

Dr. Donath's efforts have been directed towards keeping the driver in the loop, using sensing, control systems and improved human-machine interfaces to reduce driver error, and thus prevent crashes before they happen.

To help teen drivers stay safe on the road, Dr. Donath's research team developed the Teen Driver Support System (TDSS). The smartphone-based system is a comprehensive application that provides real-time, in-vehicle feedback to teens about their risky behaviors and reports the behaviors to parents via text message if teens don't heed the system's warnings. Research results indicate an overall safety benefit of TDSS, demonstrating that in-vehicle monitoring and driver alerts, coupled with parental notifications, is a meaningful intervention to reduce the frequency of risky driving behaviors that are correlated with novice teen driver crashes.

INTEGRATION OF BUS STOP COUNT DATA WITH CENSUS DATA FOR IMPROVING BUS SERVICES AND EFFICIENCY

June 22, 2015 at NJDOT Headquarters

Dr. Catherine T. Lawson,
University at Albany, NY

Dr. Katherine Lawson presented at the NJDOT Headquarters on June 22, 2015 on the topic of "Integration of Bus Stop Count Data with Census Data for Improving Bus Services and Efficiency".

Dr. Lawson is the Chair of the Geography and Planning Department and the Director of the Master's in Regional Planning Program at the University at Albany – State University of New York. She is an Associate Professor in the Department of Geography and Planning, an Affiliated Faculty member of the Department of Informatics, in the College of Computing and Information, and is the Director of the Lewis Mumford Center/Albany Visualization and Informatics Lab.

Dr. Catherine Lawson, director of the Albany Visualization And Informatics Lab (AVAIL) at the University at Albany, and the AVAIL research team, showcased their innovative new transit demand modeling tools being developed as part of a two year research project with NJTransit, NJDOT and UTRC. The web-based tool suite utilizes the latest data science methods and open source software tools to display vivid maps and graphs using a variety of transit datasets, including publically available datasets (US Census, Census Transportation Planning Package), NJTransit farebox data, on-board survey data and General Transit Feed Specification (GTFS) open data. This user-friendly web-based software tool will allow planners to run flexible transit demand models on any subset of census tracts based on time of day and time of year and to visually analyze the results of future forecasts of demographic and socio-economic shifts.

WORKZONE OPERATIONS, PLANNING AND SAFETY: THE ROAD FROM RESEARCH TO IMPLEMENTATION

June 23, 2015 at NJDOT Headquarters

Dr. Kaan Ozbay
New York University

Dr. Kaan Ozbay, presented at the NJDOT Headquarters on June 23, 2015 on the topic of "Workzone Operations, Planning and Safety: The Road from Research to Implementation".

Kaan M.A. Özbay is a Professor at the Department of Civil and Urban Engineering (CUE) and Center for Urban Science and Progress (CUSP) at NYU since August 2013. Professor Ozbay was a tenured full Professor at the Rutgers University Department of Civil and Environmental Engineering between July 1996 and July 2013. In 2008, he was a visiting scholar at the Operations Research and Financial Engineering (ORFE) Department of Princeton University.

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

UNMANNED AERIAL VEHICLES

October 8, 2015 at NJDOT Headquarters

Lawrence H. Brinker, Esq.
NUAIR Alliance

Lawrence H. Brinker, Esq., Executive Director & General Counsel of the NUAIR Alliance, presented at the NJDOT Headquarters on October 8, 2015 on "Unmanned Aerial Vehicles". Mr. Brinker is an experienced pilot and aviation attorney currently serving as the Executive Director & General Counsel of the NUAIR Alliance, a Not-for-Profit corporation with over 70 public, private, and academic partners, managing the Griffiss International Airport, FAA authorized, Unmanned Aircraft Systems Test Site in New York, Massachusetts, and Michigan He is retired from the US Air Force with 25 years total active and reserve service. During his military career he attained the rank of Lt. Colonel and held various positions including Command Pilot, Intelligence Officer, Operations Officer, Ethics Counsel, Congressional Liaison and Squadron Commander.

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

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.

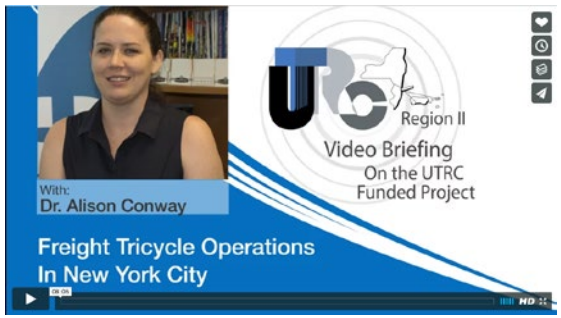
UTRC'S VIDEO BRIEFING ON COMPLETED RESEARCH

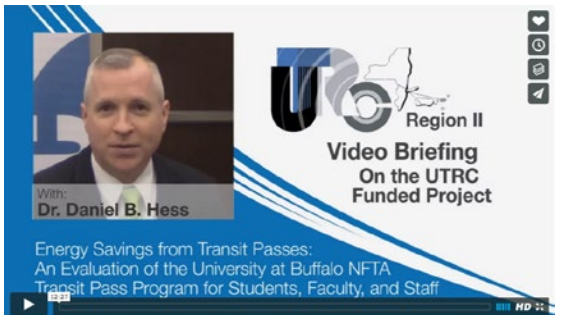
UTRC is continuing the initiative launched two years ago consisting of developing Video Briefing of Research Projects. This is one of our endeavour in meeting our commitment to broadly disseminate our research-related publication to the public, which already includes the following channels:

- **Press Releases to our listserv of 5000+ 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: **vimeo.com/utrcregion2**





The Belt Parkway and The Verrazano Bridge, New York

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