



UNIVERSITY TRANSPORTATION RESEARCH CENTER . REGION II

SPRING 2017
RESEARCH NEWS

IN THIS ISSUE

HIGHLIGHTS

EDUCATION

UPCOMING EVENTS

PAST EVENTS

RESEARCH

HIGHLIGHTS

IN REMEMBRANCE OF OUR LOST FRIEND: **HERBERT S. LEVINSON:**

The University Transportation Research Center is very sad about the passing of its Icon Mentor, Herb Levinson, on February 16, 2017. A giant in modern transportation engineering and planning, Herb served as problem solver, analyst, rational thinker, colleague, mentor and dear and beloved friend. Much of what we study and act on in addressing urban transportation planning – whether it be pedestrian movement, rational use of streets, BRT and LRT and common sense traffic analysis has its origins in work that Herb had done.



Mr. Levinson served as senior vice president of Wilbur Smith and Associates and served on the faculty of the University of Connecticut and Yale University. To quote the Institute of Transportation Engineers biography of Herb Levinson, “Few transportation professionals have been so extensively published. Transportation Research Information Services (TRIS), American society of Civil engineers (ASCE), ITE and a myriad of other organizations cite more than 1000 of Herb’s papers. He worked on projects across North America and in many countries around the world.” Mr. Levinson was elected a member of the National Academy of Engineering in 1994, elected an Honorary Member of the Institute of Transportation Engineers in 1997, and received the ASCE Wilbur Smith Award.

Herb will be greatly missed. We pray his soul may rest in peace.

UTRC’S SPONSORED RESEARCH PROJECT: **“A NEW ROLE FOR RAIL TRANSIT: EVACUATION”** WAS HIGHLIGHTED IN THE LATEST ISSUE OF **UTC SPOTLIGHT**

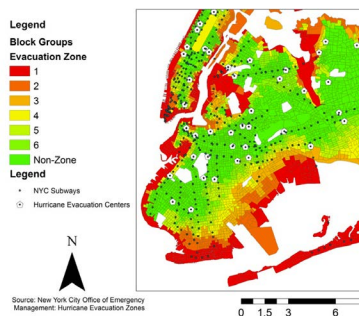


Figure 1: Selected Subway Station Location, Evacuation Zones and Evacuation Centers, Manhattan, Queens and Brooklyn

Source: This map is based on and is an extract of the NYCEM NYC Hurricane Evacuation Zones, http://www.nyc.gov/html/oem/downloads/pdf/hurricane_map_english.pdf, with selected subway station locations added using Geographic Information Systems.

A research project from UTRC faculty member, Dr. Rae Zimmerman of New York University was featured in the recent issue of the USDOT’s UTC Spotlight. The research project titled, “Public Transit and Mandatory Evacuations Prior to Extreme Weather Events in NYC,” was funded by the University Transportation Research Center (UTRC). The project’s research team consists of Professor Rae Zimmerman (PI and Director of ICIS); Senior Research Scientist Dr. Carlos E. Restrepo; and Senior Graduate Student Researchers Robert A. Joseph and Jimena Llopis.

The project describes how urban areas in the U.S. and around the world are facing increasing extreme events often requiring decisions to move large numbers of people to safety. New York City (NYC) has experienced numerous extreme weather events associated with flooding, and one response by NYC is to provide evacuation resources. Following Hurricanes Irene and Sandy, NYC mandated evacuations. NYC has defined evacuation zones based on severity of flooding risks from storms and storm surges, and has located 64 hurricane evacuation centers outside of these zones. Of NYC’s six evacuation zones, Zone 1 is defined as having the most risk of exposure to that flooding. Other centers and shelters supplement evacuation centers.

To access the full article, please follow the link:

https://www.transportation.gov/sites/dot.gov/files/docs/utc/April_2017_UTC_Spotlight.pdf

For additional information about the project, contact Prof. Zimmerman at rae.zimmerman@nyu.edu.

UTRC RESEARCHERS COMPLETED PROJECTS FOR THE FIRST PHASE OF NYC COORDINATED INTELLIGENT TRANSPORTATION SYSTEMS DEPLOYMENT (CIDNY)

The FHWA, through its New York Division/New York City Metropolitan office is promoting programs pertaining to urban Intelligent Transportation Systems (ITS) in the region. The NYCDOT and NYSDOT-Region 11 have taken the initiative to develop ITS related projects under this FHWA program. NYCDOT and NYSDOT have developed Training Courses and Research and Development Programs for the NYCDOT and NYSDOT Coordinated Intelligent Transportation Systems Deployment in New York City (CIDNY) which is a set of multi studies (task assignments) toward the fulfillment of the objectives of this program.

The studies are being performed by institutions of the Region 2 University Transportation Research Center (UTRC). The studies focused on the following program areas: Construction Management, Traffic Demand Management, Dynamic Data Collection, Traffic Incident Management, Traffic Signal Timing and Detection Technologies, Strategic ITS Deployment Plan, Pedestrians and Cyclists Safety, Data Storage and Access Platform for MTA Bus Time Data. The following tasks have been completed under the first phase of this program.

- Task 2 – Develop a multi-agency/multi modal construction management tool to enhance coordination of construction projects citywide during planning and operation phases to improve highway mobility and drivers experience
<http://www.utrc2.org/research/projects/develop-multi-agencymulti-modal-construction-management-tool>
- Task 5 –Develop a comprehensive guide to traffic signal timing, new detection technologies and advanced signal timing concepts applicable in New York City
<http://www.utrc2.org/research/projects/develop-comprehensive-guide-signal-timing-new-detection-technologies-and-advanced>
- Task 6 – Strategic ITS Deployment Plan For New York City
<http://www.utrc2.org/research/projects/strategic-intelligent-transportation-systems>
- Task 7 – Research on Pedestrians and Cyclists Safety Using ITS Technology in NYC
<http://www.utrc2.org/research/projects/research-pedestrians-and-cyclists-safety>
- Task 8 – Develop Data Storage and Access Platform for MTA Bus Time Data.
<http://www.utrc2.org/research/projects/develop-data-storage-and-access>

UTRC RESEARCHERS IN PRESS

Dr. Robert E. Paaswell on the News!

Hyperloop Doc—Almost Ready for Toronto!

<https://vimeo.com/215347023>

Metro.US

New NYC Ferry goes express to Rockaway Beach

<https://goo.gl/j4rM8v>

Wall Street Journal

New York's Penn Station a Human-Traffic Nightmare

<http://www.newsmax.com/US/Penn-Station-traffic-infrastructure-train/2017/03/20/id/779806/>

ABC 7 – UP CLOSE:

UP CLOSE: AMTRAK REPAIRS AT PENN STATION

<http://abc7ny.com/politics/up-close-amtrak-repairs-at-penn-station/1936861/>

Boston Globe

MBTA leads nation in derailments

<https://goo.gl/ggwdPE>

Matthew W. Daus on the News!

CRAIN's New York Business

Have taxis finally hit rock bottom?

<https://goo.gl/QsC8Kz>

How several small-time investors got hosed when Uber crashed the taxi market

<https://goo.gl/HQP4nA>

Fox 5 News

The 'Uber effect' on the taxi industry

<http://www.fox5ny.com/news/240269677-story>

A Must Read! UTRC Researchers' Feedback on Delivery Trucks

From the Atlantic CityLab

[Cities Seek Deliverance From the E-Commerce Boom](#)

EDUCATION

UTRC SCHOLARSHIP PROGRAM FOR THE ACADEMIC YEAR 2017-2018

SEPTEMBER 11TH MEMORIAL PROGRAM SCHOLARSHIP (OPEN)



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

Though there have been two ways in which to participate in this program in prior years, only the internship option is being offered during 2017-18. The internship option requires that the student be available to be on site at an agency within the NYMTC region.

IMPORTANT NOTICE:

The application process for the NYMTC/UTRC September 11th Program Academic Initiative Internship Program is now open for the **2017-18 academic year** and applications can be submitted on the UTRC2 website (www.utrc2.org) through **June 2, 2017**. Two awards will be granted. Graduate students who attend a UTRC consortium institution and will be enrolled full-time during the 2017-18 school year are eligible to apply.

AVAILABLE INTERNSHIPS

The following is a list of internships available for the September 11th Memorial Program Scholarship.

1. Clean Freight Corridors Program
2. Community Planning Initiatives
3. Vertical Integration of Land Use and Transportation Planning
4. Areawide Industrial Land Use Study
5. Vision Zero Pedestrian Safety Action Plan Updates
6. Downtown Jamaica Transportation Study – Southeast Queens Transit Deserts Commuter Travel Time and Costs

The details of these internship are available on the website at: <http://www.utrc2.org/education/available-internships-9/11>

To apply, please visit the UTRC website at: <http://www.utrc2.org/education/september-11th-memorial-program>

UTRC FACULTY PROFILE

Dr. Qing He

Stephen Still Assistant Professor,
Transportation Engineering and Logistics
Civil Engineering and Industrial Engineering
University at Buffalo (UB)
The State University of New York
Email: qinghe@buffalo.edu



Dr. Qing He is currently the Stephen Still Assistant Professor in Transportation Engineering and Logistics, affiliated with both Civil Engineering and Industrial Engineering at University at Buffalo (UB), The State University of New York. He obtained his PhD in Systems and Industrial Engineering from University of Arizona in 2010. Prior to joining UB, he worked as a post-doctoral researcher in IBM T J Watson Research Center in Smarter Transportation Area. He has published more than 20 journal papers and 30 conference papers in traffic operations and control, social media and transportation analytics, railway transportation and logistics. Also, he possesses 7 U.S. patents in transportation. Recently, he received worldwide IBM Faculty Partnership Award twice in 2012 and 2014, respectively. He has been awarded over \$1.5 million as his share in research grants as a Principal Investigator (PI) or Co-PI from a broad range of agencies, including National Science Foundation, US Department of Transportation, Federal Highway Administration, Federal Rail Administration, UTRC, New York City Department of Transportation, and IBM. His research has been highlighted in a variety of national media and TVs: The Washington Post, The Weather Channel (live interview), NBC, Yahoo! News, Buffalo Channel 2 (live interview), Buffalo Channel 7 (live interview), etc. Currently Dr. He is serving on Editorial Advisory Board of Transportation Research Part C, a leading journal in transportation technologies with impact factor 3.075. Also he is the leading guest editor on a special issue- "Big Data in Railway Transportation" of Transportation Research Part C.

With regard to education, Dr. He's research team consists of 5 PhD students, 6 MS students and 4 undergraduate students. In addition, he has graduated 2 PhD students in fall 2016. In terms of K-12 education, Dr. He led UB's National Summer Transportation Institute (NSTI), a national summer camp funded by Federal Highway Administration in 2013, 2014, 2015, and 2016, and successfully recruited 102 high school students (including 54 minority and female students) and accomplished a series of projects, field trips and lectures related to multi-modal transportation.

Recently Dr. He has completed one faculty initiated UTRC project, "Smarter Multi-modal Traffic Signal Control with Both Floating Sensor Network and Fixed Sensor Network". The project resulted in three journal papers (e.g. Chapter 3 was published in IEEE Transactions on Intelligent Transportation (X. Su et al. 2016), Chapter 4 was published by Transportation Research Part C (Z. Zhang et al. 2016), and Chapter 5 will be submitted soon) and two conference papers (one TRB (X. Su et al. 2015) and one KDD, a top data mining conference (Cai et al. 2015)). The results generated from this project have been disseminated to TRB annual meetings, INFORMS annual meetings, KDD, Buffalo/Niagara Traffic Signal Committee Meetings.

EVENTS

UPCOMING EVENTS



**ReThinkNYC
PLAN
2050**

PENN STATION & A POST-MOSES NEW YORK

The Great Hall at
The Cooper Union
6:30PM - 8:30PM
MAY 9th, 2017

PRESENTED BY: **ReThink Studio**

SPONSORS: **UTC** University Transportation Research Center

untapped cities. Rediscover your city.

THE ARCHITECTS NEWSPAPER

"Transport, more than anything, changes a place."
- John Betjeman, British poet

Robert Moses' legacy continues to shape our city, from Penn Station to the outer limits of the region and everywhere in between. By ReThinking how we invest in our public transit infrastructure, we can build a world-class region that makes it possible to get from anywhere to everywhere.

Please join us in envisioning a Post-Moses New York, what it means for the city, and how to make it a reality.

Presentation begins at 6:30
The Great Hall at The Cooper Union
7 E 7th St, New York, NY 10003

For more information about ReThinkNYC and ReThink Studio, visit our website, at rethinkstudio.org

Presentation by:

- Jim Venturi (ReThink Studio)
- Lane Rick (ReThink Studio)

Speakers include:

- Christopher Jones (Regional Plan Association)
- Margaret Newman (ARUP)
- Gina Pollara (ReThink Studio)
- Dr. Robert Paaswell (The City College of New York)
- Sam Roberts (The New York Times)
- Sam Schwartz (Sam Schwartz Engineering)
- Dr. Vukan Vuchic (University of Pennsylvania)

Moderated by:

- William Menking (The Architect's Newspaper)

The 2017 Smart Driving Car Summit May 17-18, 2017 at Princeton University

This conference brings together the buyers, sellers and facilitators of SmartDrivingCars, trucks and buses. It is time to move past the hype and accelerate the commercialization and deployment of SmartDriving technology so that society can begin to capture its benefits.

For more information and Registration, please visit <http://summit.smartdrivingcar.com/>



PUBLIC COMMENT PERIOD AND PUBLIC REVIEW MEETINGS FOR DRAFT PLAN 2045, CONGESTION MANAGEMENT REPORT, AND TRANSPORTATION CONFORMITY DETERMINATION

NYMTC announces an opportunity for the public to offer comments and attend various public review meetings for the draft of its new Regional Transportation Plan (*Plan 2045*), related Congestion Management Process (CMP) Status Report and the draft Transportation Conformity Determination for the Plan and the 2017-2021 Transportation Improvement Program.

The 30-day public comment period will begin on May 1, 2017 and ends at 4 p.m. on May 30, 2017. All the documents will be available for download at www.nymtc.org.

Public review meetings will be held throughout the region:

LOWER HUDSON VALLEY		NEW YORK CITY		LONG ISLAND	
MAY 10	PUTNAM 3:30 p.m. & 6:30 p.m. Cornerstone Park 1 Fair Street Carmel, NY 10512	MAY 16	MANHATTAN 3:30 p.m. & 6:30 p.m. NYMTC Office 25 Beaver Street NY, NY 10004	MAY 23	SUFFOLK 3:30 p.m. and 6:30 p.m. Riverhead Legislative Auditorium Suffolk County Legislature, Evans K. Griffing Building 300 Center Drive Riverhead, NY 11901
MAY 11	WESTCHESTER 3:30 p.m. & 6:30 p.m. Westchester County Center 198 Central Avenue White Plains, NY 10606	(These meetings will also be available as webinars)		MAY 24	NASSAU 3:30 p.m. and 6:30 p.m. Nassau County Legislature Chamber 1550 Franklin Avenue Mineola, NY 11501
		3:30 p.m. Webinar http://bit.ly/Plan2045330PM ID: 647 508 216 Password: Plan2045-330		6:30 p.m. Webinar http://bit.ly/Plan2045630PM ID: 645 463 528 Password: Plan 2045-630	

PLAN 2045

Maintaining the Vision for a Sustainable Region

NYMTC's new draft Plan lays out a long-range framework for maintaining and improving the region's transportation system (i.e. roads, bridges, mass transit facilities, bicycle and pedestrian networks and goods movement). *Plan 2045* is a required step to bringing federal transportation dollars into the region.

CONGESTION MANAGEMENT

The 2017 Congestion Management Process (CMP) Status Report

Accompanying *Plan 2045* is the draft CMP Status Report, which forecasts future traffic congestion and specific details of congestion at the county/borough level.

TRANSPORTATION CONFORMITY

Transportation Conformity Determination

The Transportation Conformity Determination quantitatively forecasts future mobile source emissions and our environmental footprint in response to federally-mandated air quality standards.

HOW CAN YOU PARTICIPATE?

Meetings in Person:

Please RSVP by phone 212-383-7200 or E-mail Michael Giardina at Michael.Giardina@dot.ny.gov

Webinars:

The May 16th Meetings may be attended in person or as webinars.

Online Virtual Forum:

You can also comment online at the NYMTC Engagement Forum "MySidewalk" at: www.nymtc.mysidewalk.com

By Mail:

Comments may be sent by 4 p.m. on May 30th, 2017 to: New York Metropolitan Transportation Council
Attn: Public Comment Period
25 Beaver Street, 2nd Floor | New York, NY, 10004
Or email: nymtc-public-info@dot.ny.gov
In the subject line, please indicate on which item you are commenting: Plan and CMP, or Conformity.

NYMTC Social Media Channels:

Facebook.com/NYMTC
@NYMTC
linkedin.com/company/nymtc
For more information please contact:
NYMTC-Web@dot.ny.gov | 212-383-7200



The New York Metropolitan Transportation Council complies with the Americans with Disabilities Act and federal Limited English Proficiency guidelines. If you need special accommodations to participate in any of these workshops, or translation services into Spanish, Russian or Chinese, please contact Andrea.Miles-Cole@dot.ny.gov at least 72 hours before the meeting date.

English
Spanish
Chinese-Simplified
Chinese-Traditional
Russian

For translated documents go to www.nymtc.org
Para ver los documentos traducidos, vaya a www.nymtc.org
查看已翻译文件访问 www.nymtc.org
查看已翻译文件访问 www.nymtc.org
Переведенные документы можно получить по адресу www.nymtc.org



2017 Annual Summer Meeting

June 19–21, 2017 @ Buffalo, New York



The Transportation Informatics Tier I University Transportation Center (TransInfo) is excited to host the 2017 Annual Summer Meeting of the Council of the University Transportation Centers (CUTC)!

The CUTC Summer Meeting attracts the nation's leading transportation professionals from academia and industry along with U.S. DOT and other transportation agency officials. The meeting serves as a venue to exchange information and enhance collaboration between university transportation centers, and between centers, the US Department of Transportation, and other government agencies.

The three-day event will feature distinguished speakers including keynote addresses, presentations, panels and guided discussions covering a broad range of topics related to transportation. A portion of the program is managed by the UTC Program Staff from the U.S. DOT Office of the Assistant Secretary for Research and Technology. The remainder of the program is managed by the CUTC's Executive Committee in collaboration with TransInfo.

To register, please follow the link: <http://www.buffalo.edu/transinfo/Events/2017CUTC/register2017.html>



REGISTER NOW

**INTERNATIONAL ASSOCIATION OF
TRANSPORTATION REGULATORS**
30th ANNUAL CONFERENCE
September 24-27, 2017
Sheraton Austin Hotel at the Capitol
Austin, Texas



<http://iatr.global/>

The 2017 IATR conference will be at the epicenter of one of the U.S.'s fastest growing tech business hubs - Austin, Texas - from September 24th - 27th at the Sheraton Austin Hotel at the Capitol. To learn more about the program, sponsorship opportunities and to register, please visit www.iatr.global and to be placed on our listserv or mailing list to receive further information, send an email to info@iatr.global

The IATR's 2017 conference theme of "Keeping Regulation Weird" cannot be more apropos given that Austin is the only city in the U.S. where, ironically, one of the largest tech start-ups ever (Uber), had its operating authority suspended pending compliance with local requirements. Meanwhile, other competing licensed transport app services have managed to fill this niche.

PAST EVENTS

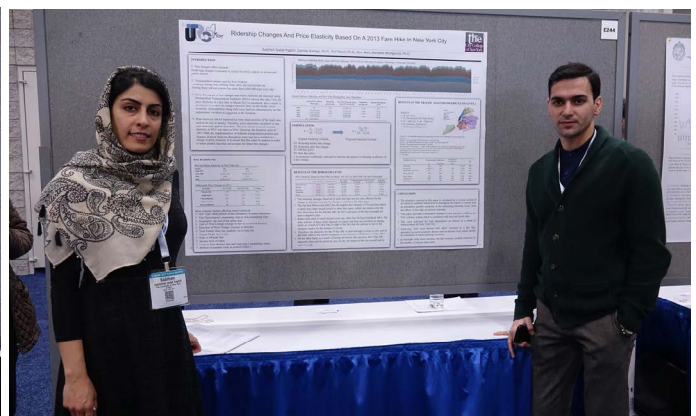
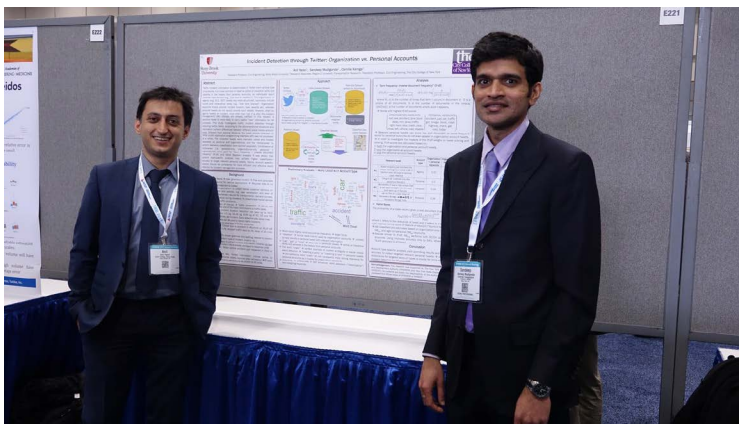
2017 TRB ANNUAL MEETING

January 10-14, 2016, Washington, DC

The University Transportation Research Center (UTRC) was very well represented at the Transportation Research Board (TRB) 96th Annual Meeting held from January 8-12, 2017 in Washington, D.C. UTRC faculty researchers and students participated in the lectern presentations and poster sessions, and also presided over many sessions. UTRC also has put together a compendium of our researcher's presentations & papers, covering topics from all transportation modes.

The 2017 TRB Compendium is available to download at:

<http://files.constantcontact.com/08b78404201/ef503a49-f364-4ec4-a6ed-83af408b73d5.pdf>



AWARDS & RECOGNITION

at the Council of University Transportation Centers (CUTC)

Annual Awards Banquet, held on January 7, 2016 at Washington, DC



CUTC honored two students from UTRC; Ms. Dan Wan and Mr. Le-rone Savage at the CUTC Banquet awards held on January 7, 2017 at Washington, DC. Both recipients were awarded the 26th CUTC outstanding student of the year award. The award is sponsored by the U.S. Department of Transportation (U.S. DOT) and administered by the Office of the Assistant Secretary for Research and Technology (OST-R).

CUTC, established in 1979, works to advance the state-of-the-art in all modes and disciplines of transportation. Its membership consists of 93 of the nation's leading university-based transportation centers. The event was held in conjunction the Transportation Research Board's (TRB) 96th annual meeting.

MOVING GOODS AND PEOPLE TO, FROM, AND ALONG THE BROOKLYN WATERFRONT

March 31st, 2017, Brooklyn Borough President Hall, Brooklyn



Event Photography: Robin Michals

The full day conference, sponsored by BWRC and the University Transportation Research Center, had as its goal a comprehensive conversation about the transportation needs of the communities, businesses, and visitors along the Brooklyn waterfront. Some of the questions that were discussed at the event are: Have those needs been studied? Who are the community-based actors working on these issues and what are they saying? How are city, state, and local officials planning to address the issues? There are many means of transportation and transportation infrastructures in place or proposed: subways, barges, buses, trucks, ferries, private shuttles, freight rails, the Brooklyn Greenway, bicycles, a light rail system, car sharing services such as Uber and Lyft, and even a gondola to replace the L line. Are, or could, these systems be sufficient to meet the needs? Trying to answer these and other transportation questions were the keynote lunch speaker, Congressman Jerrold Nadler, representatives of maritime industries, elected and appointed officials, representatives from waterfront communities, developers of residential, commercial, and industrial properties, and transportation scholars.

For more information, please visit the website at:

For more information, please visit the website at:

<http://www.utrc2.org/events/conference/moving-goods-and-people-along-brooklyn-waterfront>

Press' articles on the event are available in the following links:

Brooklyn Daily Eagle

[A changing, uncertain future for the Brooklyn waterfront addressed at CUNY conference](#)
[Exclusive: Critics, advocates of BQX go head-to-head in heated panel](#)

2017 NJ TRANSACTION CONFERENCE

April 4-6, 2017, Tropicana Hotel, NJ



UTRC participated at the 2017 NJ Transaction Conference that took place on April 4-6, 2017 at Atlantic City, New Jersey. This year, nearly 1000 transportation management, directors, planners, engineers, grant writers, operators, elected officials, municipal, county and state representatives, scholars, consultants and administrators attended the TransAction Conference. UTRC shared the floor with many other exhibitors in order to display the center's vision, programs, and research work to the conference attendees from more than 32 states and 4 provinces of Canada.

For more information, please visit the NJ Transaction conference webpage at: <https://www.njtransaction.com/>

CAR FREE DAY - A PANEL DISCUSSION ON STATE TOWARDS A SUSTAINABLE TRANSPORTATION FUTURE IN NYC

April 12, 2017 at the New York Institute of Technology

UTRC organized a half-day Car-Free Day symposium on April 12th, 2017 at the New York Institute of Technology, entitled, A Panel Discussion on Steps towards a Sustainable Transportation Future in NYC. Dr. Nada Anid; Dean, School of Engineering and Computing Sciences at the New York Institute of Technology welcomed the attendees and introduced the keynote speaker; Honorable Ydanis Rodriguez, Transportation Committee Chair. Hon. Rodriguez addressed a three pronged plan to address congestion caused by truck deliveries:

1. The legalization of E-Bikes in New York State, with the intention to use e-bikes to transport goods, packages and more, as is being done in cities such as Portland, Oregon.
2. Distribution centers should be located outside of NYC, where delivery bikes can be dispatched from, instead of trucks traversing the city.
3. If goods are to be delivered by truck, they should be delivered between 7pm and 7am, to avoid rush hour on city streets.

The full text of the Hon. Rodriguez's full speech can be found here: conta.cc/2otvNwM

Policy Panel: Car Free Day Policymaking – How Will the Data and Research Influence Future Transport Policy

Moderator: Matthew W. Daus, Esq., Distinguished Lecturer, CCNY/UTRC

- Pierina Ana-Sanchez, NY Director for the Regional Plan Association
- Michael Repogle, NYC DOT Deputy Commissioner for Policy
- Caroline Samponaro, Deputy Director of Transportation Alternatives
- Nilda Mesa, Former Director of NYC Mayor's Office for Sustainability & Professor at Columbia University



Research Panel: Research Opportunities and What the Data Shows

Moderator – Dr. Camille Kamga, CCNY/UTRC

- Dr. John Falcocchio, Professor, NYU Tandon School of Engineering
- Dr. Alison Conway, Professor, City College of NY, CUNY
- Sarah Kaufman, Professor, NYU Rudin Center for Transportation Book Talk: Automated Transit: Lessons to be learnt for today's Driverless car development



The symposium was very well attended by various transportation experts. The event was organized as part of the countdown to Car Free Day on Earth Day held this year on April 22, 2017.

The event was videotaped, accessible at: <http://www.utrc2.org/events/2017-car-free-day-panel-discussion>



Photos Credit: Aaron D. Hernandez

Book Talk: Automated Transit: Lessons To Be Learnt For Today's Driverless Car Development

April 17, 2017 at the New York Institute of Technology



Photo Credit: Aaron D. Hernandez

UTRC organized a Book Talk with Dr. Rongfang (Rachel) Liu. Dr. Liu is a transportation professor in the Department of Civil and Environmental Engineering, New Jersey Institute of Technology (NJIT). Her primary research interests are in the areas of multimodal and intermodal transportation planning, which focus on the interaction and coordination of various transportation modes, such as walkways, highways and private cars, buses, rails, and airlines.

Rachel presented the findings of her latest book on Automated Transit. This book analyzes the successful implementations of automated transit in various international locations, such as Paris, Toronto, London, and Kuala Lumpur, and investigates the apparent lack of automated transit applications in the urban environment in the United States. The book begins with a brief definition of automated transit and its historical development. After a thorough description of the technical specifications, the author highlights a few applications from each sub-group of the automated transit spectrum. International case studies display various technologies and their applications, and identify vital factors that affect each system

and performance evaluations of existing applications. The book then discusses the planning and operation of automated transit applications at both macro and micro levels. Finally, the book covers a number of less successful concepts, as well as the lessons learned, allowing readers to gain a comprehensive understanding of the topic.

To access the Rachel's presentation, please visit the webpage at:

<http://www.utrc2.org/events/book-talk-automated-transit>

UTRC Director, Dr. Camille Kamga Presented at the NJTPA Symposium on Smart Cities & Transportation Symposium

April 26th, 2017 at North Jersey Transportation Planning Authority, NJ



Dr. Camille Kamga, UTRC's Director and an Assistant Professor at the City College of New York presented at the NJTPA hosted symposium on Smart Cities and Transportation. The event took place on April 26th, 2017 at North Jersey Transportation Planning Authority, NJ. Dr. Kamga presented in a panel discussion addressing the public sector experience.

The symposium aimed to address transportation issues on how our transportation networks will adapt to a world of self-driving vehicles, expanded ride hailing services, smart parking, adaptive traffic signals and advanced traveler information.

The NJTPA's Plan 2045: Connecting North Jersey will include recommendations on how we can incorporate these technologies to make our region more Competitive, Efficient, Livable and Resilient.

[Audio and video files from the event](#)

For more information, please visit the NJTPA's website at: <http://www.njtpa.org/home>

THE LIGHTING RESEARCH CENTER (LRC) AT RENSSELAER POLYTECHNIC INSTITUTE (RPI)

LRC at the TRB Annual Meeting

LRC researchers participated in several events at the 2017 Transportation Research Board Annual Meeting, held in January 2017 in Washington, DC. John Bullough, Director of Transportation and Safety Lighting Programs, shared the results of the LRC's recent UTRC study on urban pedestrian crosswalk lighting in the human factors workshop "Walking at Night - The Pedestrian's Perspective, or The Dangers of the Night-Walkers." This study and earlier LRC studies were also presented in a paper by Bullough and Nicholas Skinner entitled "Real-World Demonstrations of Novel Pedestrian Crosswalk Lighting." Bullough also presented the paper "Human Factors Impacts of Light-Emitting Diode Airfield Lighting," describing the visibility benefits of new lighting technologies for lighting along taxiways and runways. This paper was identified by TRB as one of its Practice-Ready Papers, defined by TRB as those that "make a contribution to the solution of current or future transportation problems or issues for practitioners." LRC Director Mark Rea was an invited speaker in a session jointly sponsored by the TRB Committees on Visibility and on Ecology and Transportation entitled "Addressing Concerns About LED Street Lighting," which featured talks on health impacts of light emitting diode street lights and on potential effects on wildlife. Rea's talk was "Beyond Illuminance and CCT: How Do We Measure the Health Impacts of Roadway Lighting?"

LRC Presents Webinar on Health-Related Aspects of LED Public Lighting

On March 15, 2017, LRC scientists Mark Rea and Mariana Figueiro presented a webinar entitled "Response to the American Medical Association (AMA) Report 'Human and Environmental Effects of Light Emitting Diode Community Lighting'"

as part of the center's "LIVE! From the LRC" series. The webinar addressed the AMA's report cautioning the public about the use of InGaN-based LEDs. The presenters provided practical, scientific advice to address the issues raised in the AMA report; direction on correctly and accurately measuring and specifying indoor and outdoor lighting; and guidance to address the problems of misapplying short-hand metrics to the topic of the health and environmental impacts of light and lighting. Participants at more than 200 locations around the world signed up and watched the webinar online. The webinar video was made available online and can be viewed at: <https://youtu.be/2BcfcONrm58>.

NJDOT Publishes LRC Report on Work Zone Lighting

As part of a research study funded by the New Jersey Department of Transportation (NJDOT) and by UTRC, the LRC evaluated work zone illumination systems, signage sheeting materials, and flashing warning lights in order to develop guidelines for NJDOT in the planning of work zones based on duration of the project, type of work and the ambient location. The objective of the evaluations was to identify approaches to lighting and visual guidance in work zones that provide useful visual information to workers and drivers while minimizing glare and visual chaos. The resulting guidelines were summarized on a one-page, two-sided card suitable for lamination and use in the field. The report has been published by NJDOT and can be downloaded at: <http://www.nj.gov/transportation/refdata/research/reports/NJ-2016-004.pdf>. The guidelines can be downloaded at: <http://www.nj.gov/transportation/refdata/research/reports/NJ-2016-004.pdf>.

NEWS FROM COLUMBIA UNIVERSITY

Dr. Xuan Sharon Di from Columbia University will serve as a Co-PI for a NSF Funded Research Project on Measuring the Impact of an Unanticipated Disruption of On-Demand Ride Services in Austin, Texas

This grant was funded by NSF and the duration of the project is from September 2016 to August 2017. The project's PI is Robert Hampshire at the University of Michigan.

Abstract

On May 7, 2016 Austin residents voted 56 percent to 44 percent against Proposition 1, which would have allowed ride-hailing companies to continue using their own background check

systems. In response to this public decision, Uber and Lyft have suspended service in Austin indefinitely. This has had a sudden direct impact on over 10,000 drivers and countless passengers. Overnight, drivers lost a source of income from these ride-sourcing platforms while the passengers faced a reduced menu of mobility options. This major service disruption provides a unique natural experiment and presents a time-limited opportunity to measure the impact of these services on city infrastructure and the economy.

Dr. Di's role in this project is to understand the impact of on-demand ride-sourcing services on travel demand through modeling travelers' travel mode choices before and after service disruption.

Juan Francisco Saldarriaga, Columbia University, Published an Article in the Journal of Public Transportation; Access to Taxicabs for Unbanked Households: An Exploratory Analysis in New York City

Juan Francison, an Associate Research Scholar and Adjunct Assistant Professor of Urban Planning at the GSAPP Columbia University published an article, titled: Access to Taxicabs for Unbanked Households: An Exploratory Analysis in New York City. The Authors included; David A. King, Arizona State University (formerly at Columbia University) and Juan F. Saldarriaga, Columbia University.

Abstract:

Taxicabs are critical complements to public transit systems. In New York City, ubiquitous yellow cabs are as iconic as the city's subway system, and the city recently added green taxicabs to

improve taxi service in areas outside of the Central Business Districts and airports. In this paper, we used multiple datasets to explore taxicab fare payments by neighborhood and examine how paid taxicab fares are associated with use of conventional banking services. There are clear spatial dimensions of the propensity of riders to pay cash, and we found that both immigrant status and being “unbanked” are strong predictors of cash transactions. These results have implications for local regulations of the for-hire vehicle industry, particularly in the context of the rapid growth of services that require credit cards to use. At the very least, existing and new providers of transit services must consider access to mainstream financial products as part of their equity analyses.

Journal: Journal of Public Transportation, Volume 20.1, March 2017

Link to Paper: <http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1559&context=jpt>

NEWS FROM CORNELL UNIVERSITY

Dr. Oliver Gao, Associate Professor of Civil and Environmental Engineering at Cornell University, to Lead a Tier I USDOT Funded Research Center:

The Transportation Department has awarded Cornell University up to \$7 million in funds to lead a research initiative meant to explore technologies that could help reduce potential adverse effects of transportation on public health and the environment. Cornell will lead a consortium of universities as part of the Center for Transportation, Environment and Community Health at the School of Civil and Environmental Engineering to perform research under DOT's University Transportation Center program.

Oliver Gao, An Associate Professor of Civil and Environmental Engineering at Cornell, will serve as the principal investigator for the center.

NEWS FROM THE STATE UNIVERSITY OF NEW YORK

Scott Levine's Research on “Best Practices for Cost-Benefit Analysis of Road Diets”

In the March 2017 issue of the international journal Case Studies on Transport Policy, Professors Robert B. Noland (Rutgers) and Scott E. Le Vine (SUNY New Paltz) published new contributions to the active scholarly debate regarding best practices for cost-benefit analysis of Road Diets. Road Diets are a mechanism to both improve traffic safety and enhance provision for non-motorized road users, by reducing the number of traffic lanes. The new contributions seek to improve the decision-support techniques employed by practitioners considering whether to implement a Road Diet; the articles are available at: <http://dx.doi.org/10.1016/j.cstp.2016.10.004> and <http://dx.doi.org/10.1016/j.cstp.2016.11.010>.



NEWS FROM NEW YORK UNIVERSITY

Dr. Kaan Ozbay, Professor at the Tandon School of Engineering, NYU to Lead the USDOT Funded Research Center: Connected Cities for Smart Mobility toward Accessible and Resilient Transportation (C2SMART)

The U.S. Department of Transportation has selected a research consortium led by the New York University Tandon School of Engineering to become the first Tier 1 University Transportation Center (UTC) in New York City, charged with taking on some of the most pressing mobility challenges facing urban areas of all sizes.

The consortium proposal, led by Kaan Ozbay, a professor in the NYU Tandon Department of Civil and Urban Engineering, won the prestigious UTC designation from among 212 applications to the Fixing America's Surface Transportation (FAST) Act competition. The new research and education center will receive a five-year, \$7 million U.S. Department of Transportation grant that will be supplemented with matching funds that will bring its budget to \$10.5 million for the five years.

The center's research priority is Improving Mobility of People and Goods. The UTRC partners include the NYU (Lead University) and consortium members (City College of NY, Rutgers, University of Texas, El Paso, and University of Washington).

Dr. Rae Zimmerman in the News:

Co-Principal Investigator, "Dynamic Resiliency Modeling and Planning for Interdependent Critical Infrastructures," funded by Critical Infrastructure Resilience Institute (CIRI), U. of Illinois, Urbana-Champaign from the U.S. Department of Homeland Security. CIRI is part of the Homeland Security Center of Excellence at the U. of Illinois funded by the U.S. Department of Homeland Security

Dr. Zimmerman's Recent Publications:

- R. Zimmerman, "The Transit-Jobs Nexus: Insights for Transit-Oriented Development (TOD)," Fordham Urban Law Journal, Volume XLIV, Issue 4, 2017, forthcoming, approximately May 2017. In press.
- R. Zimmerman, "Effective Public Service Communication Networks for Climate Change Adaptation" In: Climate Change Adaptation in North America: experiences, case studies and best practice, edited by W. Leal Filho and J.M. Keenan. Berlin: Springer, 2017, forthcoming May 2017, in press. DOI 10.1007/978-3-319-53742-9. ISBN 978-3-319-53741-2

Dr. Zimmerman's Conference Presentations

- January 8, 2017. R. Zimmerman, Presentation No: P17-21625 Title: "Role of Transportation Policies, Protocols and Regulations in Mitigating Environmental Health Risks," in Workshop 101 "The Nexus of Transportation and Environmental Health Governance: Intersections and Collisions Across and Within Borders," Transportation Research Board Annual Meeting, Washington, DC.
- January 10, 2017. R. Zimmerman, Presentation No. P17-20592 "Integrating Physical and Cyber-Security Workforce" in Session 619: "Transportation Workforce Needs for Critical Infrastructure Resilience for Physical Security and Related Cyber-Security Challenges," Transportation Research Board Annual Meeting, Washington, DC.

Other Conference Presentations (Fall 2016)

- December 14, 2016. R. Zimmerman presentation: "Reducing Risk Magnification in Infrastructure Failures," Society for Risk Analysis Annual Meeting, San Diego, CA.
- November 5, 2016. R. Zimmerman presentation: "Resilience of Urban Transit Systems to Extreme Weather Events," Association of Collegiate Schools of Planning annual conference, Portland, OR.
- October 21, 2016. R. Zimmerman presentation: "The Transit and Jobs Nexus: Insights for Transit Oriented Development (TOD) and A Commentary, In session titled, "Getting There from Here: A Conversation About Regional Transportation," Fordham Urban Law J. Cooper-Walsh Colloquium, New York, NY.
- October 19, 2016. R. Zimmerman presentation: "Infrastructure System Interconnectivity Effects on Resilience," session titled Decision-Making and Evaluation of Proposed Alternatives, National Institute of Standards and Technology (NIST) and Colorado State University International Workshop on Modeling of Physical, Economic, and Social Systems for Resilience Assessment, Reston, VA.

COMPLETED RESEARCH PROJECTS

UTRC
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PROJECTS

A Case Study of High Speed Rail in Florida: Implications for Financing Passenger Railways

Principal Investigator(s): Dr. James Cohen

Institution(s): The City University of New York (CUNY)

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

Between 1981 and 2011, the State of Florida and private corporations, sometimes jointly, sometimes alone, made four different attempts to implement very high speed rail lines between Miami, Orlando, and Tampa, on which trains would run at very high speed, between 150 and 220 miles per hour. Yet, at present, the only new passenger line that is likely to begin operations between these cities is not very high speed, and will not run on dedicated track. Why did all the earlier attempts at very high speed lines fail, while a moderate speed line appears likely to succeed? This report shows how neoliberal ideology and policies in the 1980's caused a private consortium to plan a line based on credit from private investors and rents and profits from real estate development. When that failed, a public-private partnership was attempted in the 1990's, which relied on direct government grants, guarantee for private activity bonds, federal financing (TIFIA), and other sources.

Access the full report at:

<http://www.utrc2.org/sites/default/files/Final-Report-Case-Study-of-High-Speed-Rail-in-Florida.pdf>

A Random Utility Based Estimation Framework for the Household Activity Pattern Problem

Principal Investigator(s): Jee Eun Kang

Institution(s): State University of New York (SUNY)

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

This paper develops a random utility based estimation framework for the Household Activity Pattern Problem (HAPP). Based on the realization that output of complex activity-travel decisions form a continuous pattern in space-time dimension, the estimation framework is treated as a pattern selection problem. In particular, we define a variant of HAPP that has capabilities of forecasting activity selection and durations in addition to activity sequencing. The framework is comprised of three steps, (i) choice set generation, (ii) choice set individualization and (iii) multinomial logit estimation. The estimation results show that utilities for work, shopping and disutilities for travel time, time outside home, and average tour delay are found to be significant in activity-travel decision making.

Access the full report at:

<http://www.utrc2.org/sites/default/files/Final-Report-A-Random-Utility-Based-Estimation-Framework.pdf>

Effect of Implementing Lean-On Bracing in Skewed Steel I-Girder Bridges

Principal Investigator(s): Dr. Andrew J. Bechtel

Institution(s): The College of New Jersey

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

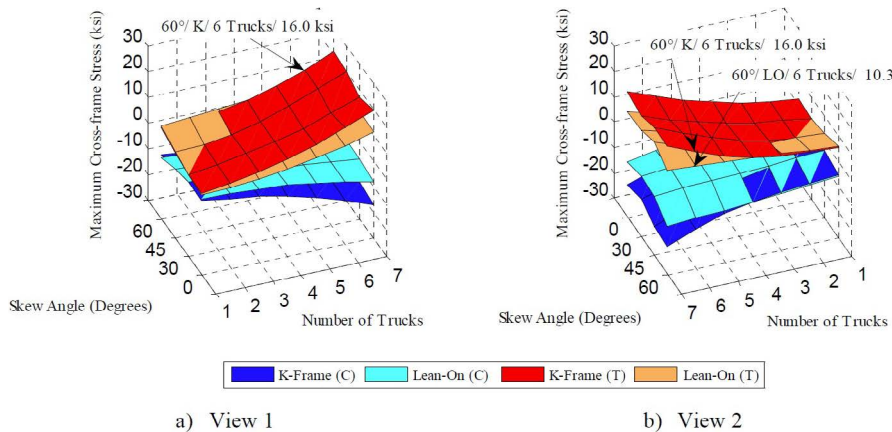


FIGURE 10 Max cross-frame stresses 1 truck (Stage 9) to ultimate

Skew of the supports in steel I-girder bridges cause undesirable torsional effects, increase cross-frame forces, and generally increase the difficulty of designing and constructing a bridge. The girders experience differential deflections due to the skewed supports, and undesirable effects arise when the girders are linked transversely. Before the placement of the deck, the main method of linking the girders transversely is through the use of cross-frames. The cross-frames are designed to provide stability during construction and distribute transverse loads through the bridge girders; this is their primary role. Cross-frames also help control differential displacement during deck placement and distribute vertical loads in the bridge's elastic and inelastic ranges.

Access the full report at:

<http://www.utrc2.org/sites/default/files/Final-Report-Effect-of-Implementing-Lean-On-Bracing.pdf>

Truck Driver Fatigue Assessment using a Virtual Reality System

Principal Investigator(s): Ayman Ali, Yusuf Mehta

Institution(s): Rowan University

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

In this study, a fully immersive Virtual Reality (VR) based driving simulator was developed to serve as a “proof-of-concept” that VR can be utilized to assess the level of fatigue (or drowsiness) truck drivers typically experience during real-life driving conditions. This study also involved examining the impact of varying driving conditions (i.e., weather conditions and driving time (day or night)) on drivers’ fatigue measure. To fulfill these goals, four drivers (two fatigued and two unfatigued) were allowed into the developed VR-based driving simulator to drive a VR-based truck at varying driving conditions. These conditions included clear day time, rainy day time, clear night time, rainy night time, foggy day time, rainy foggy day time, foggy night time, and rainy foggy night time conditions. Two fatigue measures (sway ratio and reaction time) were introduced and computed (or measured) using the VR-based simulator for all drivers. The computed measures were analyzed using multi-factor statistical analysis (ANOVA) procedures. The simulations conducted and the results obtained showed that VR-based driving simulators are a viable alternative to traditional driving simulators when developing technologies that assess drivers’ drowsiness (or fatigue) levels.

Access the full report at:

<http://www.utrc2.org/sites/default/files/Final-Report-Truck-Driver-Fatigue-Assessment.pdf>

Freight Costs at the Curbside

Principal Investigator(s): Alison Conway, Ph.D., Xiakun Wang, Ph.D.

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

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

This research aims to evaluate the different parking conditions that drivers face in critical areas of New York City, to examine the variables that impact their curbside behavior, and to develop recommendations to improve curb management. To accomplish this task, this study includes three major components: (1) an international review of literature and best practices; (2) a case study investigating existing parking availability and parking violation behavior in varying land use areas of Manhattan, New York City using available datasets from the NYC Department of City Planning, NYC Department of Finance and the NYC Department of Transportation; and (3) a case study employing a survival analysis modeling approach to investigate the relationship of parking duration with operator and regulatory factors using field data collected from a related study.

Access the full report at:

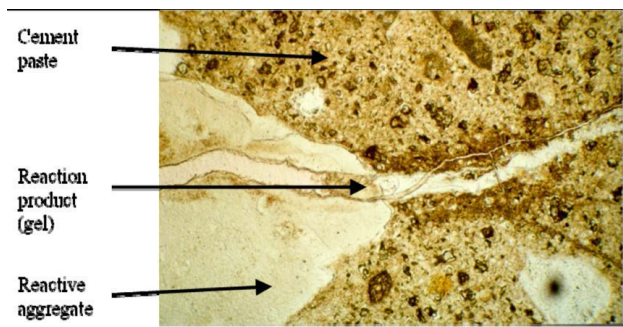
<http://www.utrc2.org/sites/default/files/Final-Report-Freight-Costs-at-Curbside.pdf>

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

Principal Investigator(s): Sulapha Peethamparan

Institution(s): Clarkson University

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



The scanning electron microscopy (SEM) image of ASR in OPC concrete(17)

This report summarizes the findings of an experimental evaluation into alkali silica reaction (ASR) in cement free alkali-activated slag and fly ash binder concrete. The susceptibility of alkali-activated fly ash and slag concrete binders to deleterious ASR was evaluated in accordance with relevant ASTM standards. Also, ASR resistance of Alkali activated fly ash and slag concrete was compared to that of ordinary portland cement concrete (OPC) while exposed to ASTM C 1293 and ASTM C1567 tests. Special attention was given to assess the effectiveness of existing ASTM test methods (ASTM C 1293 and C1567) in identifying the occurrence of ASR in AAC. Additionally, influence of activator parameters including effect of binder type, activator concentration, activator type and solution to binder ratio to the resistance of ASR in AAC was also evaluated.

Access the full report at:

<http://www.utrc2.org/sites/default/files/Final-Report-Alkali-Silica-Reaction.pdf>

Evaluation of Public-Private Partnership Contract Types for Roadway Construction, Maintenance, and Rehabilitation

Principal Investigator(s): Dr. Panagiotis Anastasopoulos, Dr. Adel Sadek, Dr. Nallan Suresh

Institution(s): State University of New York (SUNY)

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

Public-private partnerships (PPPs) in transportation infrastructure projects refer to contractual agreements formed between a public Agency and a private sector entity to allow for greater private sector participation in project delivery. At the current time, most Agencies do not have a set of straightforward guidelines by which they decide whether to adopt PPP for a given project, and if to adopt one, which type of PPP should be adopted. Before such a decision can be made in an informed manner, the Agency needs to develop and implement a PPP evaluation and decision-support framework that will incorporate the PPP costs and benefits.

Access the full report at:

<http://www.utrc2.org/sites/default/files/Final-Report-Evaluation-Public-Private-Partnership-Contract-Types.pdf>

Empirical Analysis of Consumer Aspects of Autonomous Cars

Principal Investigator(s): Scott LeVine

Institution(s): State University of New York (SUNY)

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

Evidence is rapidly accumulating that attaining the full set of benefits from Automated Vehicles (AVs) will require that they do not merely mimic human-driving behavior. For instance, in recently-completed early-stage research, Le Vine and colleagues demonstrated three prospective novel traffic-operations regimes associated with AVs, each of which have the potential to deliver a unique stream of benefits: 1) Vehicular kinematics (trajectories) to balance, in novel ways, between comfort and capacity 2) A dynamic, voluntary and de-centralized (peer-to-peer) congestion pricing mechanism 3) Alternative vehicle-speed regimes (in some circumstances slower, while faster in others) The findings of this previous phase of research were purely theoretical, and what is therefore now required are empirical results through which AV-occupants' preference structures for these prospective behavioral regimes can be established.

Access the full report at:

<http://www.utrc2.org/sites/default/files/Final-Report-Empirical-Analysis-Consumer-Aspects-Autonomous-Cars.pdf>

Effect of Plug-in Hybrid Electric Vehicle Adoption on Electric Vehicle Adoption on Gas Tax Revenue, Local Pollution, and Greenhouse Gas Emissions

Principal Investigator(s): Dr. William T. Riddell

Institution(s): Rowan University

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

Plug-in hybrid electric vehicles (PHEV) are likely to increase in popularity in the near future. However, the environmental benefits of PHEVs involve tradeoffs between the benefits of reduced tailpipe emissions against the drawbacks of increased emissions at marginal electric generation plants and reduced gasoline tax income. In this report, a model is developed that will enable these tradeoffs to be studied. The model accounts for local commuting patterns and marginal electric generation in New Jersey. The result allows the effect of PHEV adoption on gasoline tax, CO₂, NO_x and SO_x to be predicted on a county level. Sample calculations are presented.

Access the full report at:

<http://www.utrc2.org/sites/default/files/Final-Report-Effect-of-Plug-in-Hybrid-Electric-Vehicle-Adoption.pdf>

The Ties that Bind: Bi-national Trade and its Implications of the U.S. and Canada Using Bi-national Freight Movement Network via Border Crossings

Principal Investigator(s): Dr. JiYoung Park, Dr. Changhyun Kwon

Institution(s): State University of New York (SUNY)

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

The objectives of this research are to understand the economic importance of border bridges on the U.S.-Canada economies, especially involving the various US states proximate to the Provinces of Ontario, and to simulate various the U.S.-Canada border bridge policy and security scenarios. To this end, we combined a novel bi-national highway network data with a freight flow dataset using ports of entry (POE) via highway border crossings. Through several sub-procedures, the US and Canada highway systems are integrated into a single network dataset. This contributes to providing hierarchical economic impacts at the state/province or lower levels of the two countries. Complex and disaggregated models can lead to a better understanding of how economic impacts resulting from traffic pattern changes on the border bridges can affect the local economies of neighboring states in the United States.

Access the full report at:

<http://www.utrc2.org/sites/default/files/Final-Report-The-Ties-that-Bind-Bi-national-trade-Freight-Movement.pdf>

Panama Canal Expansion: The Effect of Imports and Exports Diverted from California Seaports on the Port of New York and New Jersey

Principal Investigator(s): Dr. JiYoung Park
Institution(s): State University of New York (SUNY)
Sponsor(s): University Transportation Research Center (UTRC)

In 2006, the Panama Canal Authority decided to expand the Canal by investing more than \$5 billion to accommodate bigger vessels than now to traverse the current facility. Along with the Nicaragua Canal construction that is optimally expected to finish 2019 (Miller, 2014), the widening of the Panama Canal will allow larger tankers to be able to go directly to the East or Gulf of Mexico ports and bypass the West Coast ports where so many imports currently change modes to cross-continental trucks or rail. The West Coast ports will become less important while the freight shares of the East Coast and Gulf ports will increase. Hence, the Panama Canal expansion project is expected to impact U.S. water and ground freight transportation systems significantly (including cargo distribution, port development, U.S. supply chains, and logistics).

Access the full report at:

<http://www.utrc2.org/sites/default/files/Final-Report-Panama-Canal-Extension.pdf>

Drainage Identification Analysis and Mapping, Phase 2

Principal Investigator(s): Dr. Jay Meegoda, Dr. Thomas M. Juliano, Dr. Laramie Potts, Chi Tang
Institution(s): New Jersey Institute of Technology
Sponsor(s): New Jersey Department of Transportation,
U.S. Department of Transportation Federal Highway Administration

Drainage Identification, Analysis and Mapping System (DIAMS) is a computerized database that captures and stores relevant information associated with all above ground and underground hydraulic structures belonging to the New Jersey Department of Transportation (NJDOT). DIAMS retrieves relevant performance and financial information so that NJDOT can remain compliant with Phase II of the Government Accounting Standards Board Statement 34, which is NJDOT's sole means of reporting all financial transactions, namely the value of infrastructure drainage assets on an accrual accounting basis. DIAMS also retrieves all relevant environmental information to comply with the Clean Water Act and reporting requirements of the NJDEP.

Access the full report at

<http://www.utrc2.org/sites/default/files/Final-Report-Drainage-Identification-Analysis.pdf>

Smarter Multi-modal Traffic Signal Control with both Floating Sensor Network and Fixed Sensor

Principal Investigator(s): Dr. Qing He
Institution(s): State University of New York (SUNY)
Sponsor(s): University Transportation Research Center (UTRC)

The goal of this project is to develop a comprehensive framework with a set of models to improve multi-modal traffic signal control, by incorporating advanced floating sensor data (e.g. GPS data, etc.) and traditional fixed sensor data (e.g. loop detectors, etc.). In order to accomplish this goal, we completed five tasks. First, we conduct a comprehensive survey with transportation professionals, who can bring up existing state-of-practice, open issues and future challenges in multi-modal traffic signal control. This survey also identifies the weights of travel modes under different scenarios. Second, by leveraging floating sensors (smartphones), we develop an online travel model identification algorithm and a smartphone app to automatically recognize people's travel modes, including passenger cars, transit buses, light rail as well as bicycles and pedestrians (including both jogging and walking).

Access the full report at:

<http://www.utrc2.org/sites/default/files/Final-Report-Smarter-Multi-modal-Traffic-Signal-Control-Floating.pdf>

UTRC STAFF

Camille Kamga

Director, UTRC
Assistant Professor of Civil Engineering,
CCNY

Robert E. Paaswell

Director Emeritus, UTRC
Distinguished Professor of Civil
Engineering, CCNY

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Nathalie Martinez

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Bahman Moghimi

Ph.D. Candidate

Sandeep Mudigonda

Research Fellow

Ellen Thorson

Senior Research Fellow

Patricio Vicuna

Ph.D. Candidate

Dan Wan

Ph.D. Candidate

Consortium Members Include

- ▶ City University of New York
- ▶ Clarkson University
- ▶ Columbia University
- ▶ Cornell University
- ▶ Hofstra University
- ▶ Manhattan College
- ▶ New Jersey Institute of Technology
- ▶ New York Institute of Technology
- ▶ New York University
- ▶ Rensselaer Polytechnic Institute
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Editorial inquiries and submissions can be made by contacting
Nadia Aslam at 212-650-8051 or email at nadia@utrc2.org.

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