

SPRING 2014

RESEARCH NEWS

University Transportation Research Center

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University Transportation Research Center Receives \$500,000 for ITS-Based Research

The University Transportation Research Center, Region 2, a USDOT-supported university transportation center hosted by the City of New York, CUNY, and comprised of a consortium of 19 institutions in New York, New Jersey, Puerto Rico, and the Virgin Islands, is pleased to announce that the Center has been awarded approximately \$500,000 to conduct studies during 2015-16 on behalf of NYSDOT and NYCDOT for the Coordinated Intelligent Transportation Systems Deployment in New York City Program (CIDNY). CIDNY is a multi-year program pertaining to urban Intelligent Transportation Systems (ITS) deployment with the purpose of providing ongoing training courses and conducting research and development programs in the areas of construction management, traffic demand management, dynamic data collection, traffic incident management, traffic signal timing and detection technologies, strategic ITS deployment planning, pedestrians and cyclists safety, data storage and access platform for MTA Bus Time data, and transportation modeling. Nine projects are to be funded in 2015-16 and 2016-17, with a possibility of additional projects being funded in future years. FHWA is sponsoring this project with the local share provided by NYC Department of Transportation and NYS Department of Transportation.

The following projects were selected by a committee comprised of NYSDOT and NYCDOT representatives and will be funded during 2015-16. The Agencies are expected to issue a subsequent call for proposals to select projects for 2016-17.

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

- The development of the construction management tool will be performed on behalf of NYSDOT. The project will aim to enhance coordination of planning and operations of construction within NYSDOT divisions and other agencies to optimize traffic flows within the travel corridors and networks impacted by one or more construction projects. In addition, improved coordination will enhance the safety of travelers and workers during periods of construction as a critical element of the NYSDOT "Driver's First" program. This task will evaluate the effectiveness of an enhanced Construction Impact Analysis (CIA) tool designed and developed by the Washington State Department of Transportation (WSDOT) primarily in the Puget Sound Metropolitan area. The CIA will be evaluated by UTRC with the University of Washington Transportation Research Center (TRAC) to

determine those elements of CIA which can be deployed in a test demo in NYC.

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

- Also being performed on behalf of NYCDOT, the Strategic Intelligent Transportation Systems project will assist the City to place all pieces of ITS together to improve operational efficiency. This Task will review and update the current Strategic Intelligent Transportation Systems (ITS) Deployment Plan for New York City (2005).

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

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

UTRC Organized a Roundtable Discussion on Connected and Autonomous Vehicles in New York State



Image: U.S. Department of Transportation

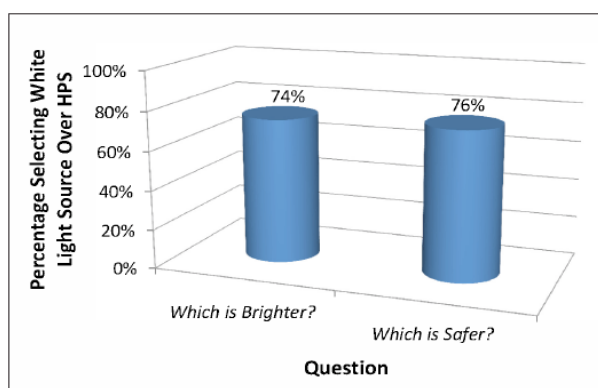
On May 20, 2014, UTRC organized and hosted a roundtable meeting on Connected and Autonomous Vehicles. The roundtable was held at the College of Nanoscale Science Engineering (CNSE) facility at Albany Union Station. Representative from the New York State Governor Office, New Yorks State Department of Transportation, New York State Department of Motor Vehicles, New York State Police, United State Department of Transportation, City University of New York, State University of New York, Rensselaer Polytechnic Institute, New York University, and private sectors have participated in the discussions.

The primary goal of the roundtable discussion was to build on the momentum of our previous two successful workshops, and meetings around a relatively small group of the key players in the field to a half-day brainstorming and discussion session in Albany. The participants have discussed: (1) the opportunities and challenges

that CV/AV will present to New York State; (2) enumerated the steps needed to be taken to take advantage of the technology, to advance the state-of-the-art in CV and AVs, and to establish New York State as a leader in the field; and (3) identified a niche for the state in this very large emerging market. With respect to a “niche” area, the following three possible opportunities were mentioned: (1) the geographic diversity of the state may offer unique opportunities for testing and evaluation of CV and AV applications; (2) the unique urban and transportation environment of NYC may provide opportunities for developing applications for transit, multi-modal transportation, pedestrians, freight, etc.; and (3) the harsh winter environment of Upstate NY may also present both challenges as well as opportunities for the CV and AV industry). The participants are to continue the dialogue and plan to host a symposium during the Fall on opportunities and challenges presented by these technologies for New York State.

UTRC’s Research Project, “Leveraging Brightness from Transportation Lighting Systems through Light Source Color” Was Featured on UTC’s Spotlight Newsletter

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



Lighting Research Center, Rensselaer Polytechnic Institute

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

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

(color) compositions and to develop a model to predict perceptions of brightness and, therefore, of safety and security under roadway lighting conditions.

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

Read the full article at RITA’s website: http://www.rita.dot.gov/utc/sites/rita.dot.gov.utc/files/utc_spotlights/pdf/spotlight_0714.pdf

2014 ITS-NY TWENTY-FIRST ANNUAL MEETING

ITS: Progress and New Opportunities

June 12 – 13, 2014; Saratoga Springs, NY



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

UTRC Director, Dr. Camille Kamga who has been appointed as the co-chair of the Intelligent Transportation Society of New York (ITS-NY)'s 21st annual meeting, delivered the opening remarks at the meeting that was held on June 12-13, 2014 at Saratoga Springs, NY. The New York State Department of Transportation's Commissioner, Joan McDonald was the keynote speaker.

The meeting was very well attended by transportation experts throughout the NY region.

Dr. Kamga also moderated the panel on **Autonomous and Connected Vehicles**.

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

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

UTRC Sponsored the 2014 ITS-NY Best Student Paper Essay Award

Lei Lin, Ph.D. Candidate at the University at Albany/SUNY

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

Mr. Lei Lin is currently a Ph.D. candidate in the Department of Civil, Structural and Environmental Engineering at UB, specializing in Transportation Systems Engineering. He is also pursuing an M.S. degree in Computer Science at UB. In addition, Mr. Lin holds a M.S. in Systems Engineering and a B.S. degree in Traffic and Transportation Engineering, both from Beijing Jiao Tong University in China. He works with Dr. Adel W. Sadek and Dr. Qian Wang at UB. His research interests are in the area of Transportation informatics, data mining, machine learning and traffic engineering. He has four refereed journal publications, along with several others under review, and other refereed conference proceedings. Mr. Lin will graduate in September, 2014. He already gets a position of Research Scientist Post-Doc within Xerox Innovation Group, Xerox Research Center, focusing on system design and data analytics in transportation.



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

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

Visit www.ITS-NY.org for more information.

UTRC Begins its New Initiative; Video Briefing on UTRC's Funded Research Projects

UTRC is pleased to announce its new initiative; Video Briefing of Research Projects. This is our latest endeavor in meeting our commitment to disseminate our research-related publications to transportation experts in the public and private sector which already includes the following channels:

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

Project Title:

Use of Web-Based Rider Input for Transit Management in the New York City Region

Project's Website:

www.utrc2.org/research/projects/use-web-based-rider-input-transit-management

Principal Investigator(s): Dr. Mitchell L. Moss, Sarah Kaufman

Institution(s): New York University

Sponsor(s): Research and Innovative Technology Administration / USDOT (RITA)

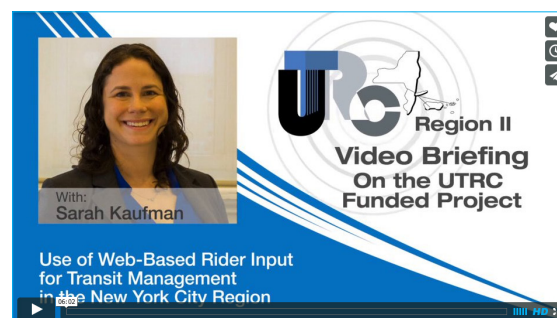
Publications: Final Report: Co-monitoring for Transit Management

Video Briefing on the UTRC Research Project: Co-monitoring for Transit Management

Please take advantage of this new resource tool to reach out to transportation experts in the field.

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.

We have begun this initiative by posting the following recently completed research project on the UTRC website, utrc2.org. The video can be accessed below and is also available through a link on the project's website page.



Video Link: <http://vimeo.com/92156856>

UTRC Hosts a Visiting Scholar from France; Martin Konning



This summer, UTRC is hosting Martin Konning, a Ph.D. fellow, affiliated with IFFSTAR (French Institute of Science and Technology for Transport, Development and Networks - University of Paris-East). IFFSTAR is one of the team members of the Metrofreight team along with USC, CCNY and KOTI. He is here, in part, to participate in the Volvo Center of Excellence (CoE) educational exchange requirements and to work with Alison Conway on her VREF urban freight-related research. Martin completed his doctorate in Economics in 2011 from Paris 1 - Panthéon Sor-

bonne University. His work mainly focused on transportation congestion in the Central Paris area: measurements and pricing schemes of congestion costs on the Paris Ring Road, valuation of crowding costs in Paris subways with the use of the contingent valuation technique, impacts of congestion costs and benefits within the socioeconomic assessment a new streetcar line in Paris. Since late 2012, Martin is a full-time researcher at the French Institute of Sciences and Technology for Transport, Development and Networks (IFSTTAR) where he works with the SLOTT-team, specialized on urban freight. He also teaches Transportation Economics for Master degree. His recent works concern the hedonic valuation of road freight characteristics, the wider economic impacts of logistics platforms or of high-speed trains in France, as well as the use of bikes for freight purposes in the Paris area.

Martin's visit at CCNY-UTRC during the summer 2014 period is related to the latter topic. With the help of Alison Conway, he is willing to quantify the external savings (reduced pollutants' emissions in particular) induced

by the increased use of bikes to move goods in Paris. Authors adopt a broad definition of goods' movement since they consider both the activities of freight professionals (courier or delivery services) and the mobility of individual passengers for shopping purposes. To do so, they rely on two data sources: a regional household mobility survey and an ad-hoc numeric survey held this summer on freight professionals. After discussing the recent transport policies implemented in the Paris area, especially those aimed at accommodating the use of bikes, they will estimate the evolution, over 2001-2014, of the kilometers travelled by bikes to move goods and the corresponding tonnage. Using emissions' parameters, they will then be able to estimate the environmental gains associated with such a change.

This research will be submitted for presentation during the 2015 TRB Annual Meeting and for publication in TRR."

UTRC's Icon Mentor Herbert Levinson Received the Professional Achievement Award from Illinois Institute of Technology Alumni Association

Dr. Herbert Levinson was awarded the professional achievement award from the Illinois Institute of Technology Alumni Association on April 25, 2014. The Professional Achievement Award honors outstanding achievement in any professional field. This award honors alumni whose achievements have brought distinction to themselves as credit to the university. Recipients have achieved great success and recognition.

UTRC's Faculty, Dr. Yusuf Mehta from Rowan University received the ASCE NJ Educator of the Year Award

Dr. Yusuf Mehta, professor at Rowan University, received the 2014 ASCE NJ Educator of the year award at the 40th ASCE NJ Annual Awards Dinner on May 9, 2014. These awards were presented to ASCE members to recognize their accomplishments. Congratulations Dr. Mehta for a well-deserved award!

UTRC's Distinguished Lecturer Matthew Daus Delivers Keynote Speech in Perth, Australia on Worldwide Proliferation of Transportation Smartphone Apps



UTRC's Distinguished Lecturer, **Matthew Daus** (right), and The Right Honorable Lord Mayor of Perth, Western Australia, **Lisa Scaffidi** (left), listen intently to opening remarks at the **2014 Australian Taxi Industry Association** conference.

Matthew Daus delivered the Keynote Address at the annual convention of the Australian Taxi Industry Association (ATIA) in Perth, Western Australia this April 2014. He also held a meeting with the International Association of Transportation Regulators' (IATR) Australian delegation of regulators representing every state.

Matt said that Perth has been in the news internationally primarily due to its designation as the official search headquarters for missing Malaysian airline Flight 370. While the topic of his speech covered smartphone app proliferation around the world, transportation technology and economic market trends, the looming tragedy of Flight 370 was on everyone's mind at the conference. In this day and age, with taxicabs being tracked through GPS and other related technologies all around the world, it is truly unbelievable that a large jet carrying precious human cargo could disappear without a trace. While we may never know what happened, this disappearance is unacceptable and should never happen again, given how basic technology could have helped to quickly locate the airliner. He believes the larger point here is that there will most likely be new updated technology in use in the airline industry, a result that inches us one step closer to more widespread public acceptance of tracking by the government for public transportation safety reasons.

This article was originally authored by Matthew Daus.

Read the full article at: www.tlc-mag.com/in_focus_may14.html

EDUCATION

For the year 2014, UTRC started receiving applications for September 11th Memorial Program and Advanced Institute for Transportation Education (AITE).

Advanced Institute for Transportation Education (AITE)

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

The applications are under review and the final selections will be announced by the end of July.

September 11th Memorial Program Scholarship

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 selected students can pursue a project in the offices of NYMTC or a NYMTC member agency. The internships will challenge students to develop creative solutions to difficult problems, providing a benefit to the region while enhancing their educational experiences.

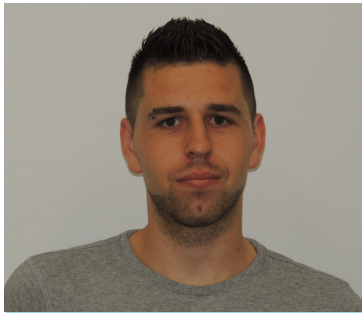
EDUCATION

UTRC Continues Hosting French Interns

For the past four years, UTRC has sponsored an informal internship program for students studying transportation planning and engineering at Ecole Nationale des Travaux Publics de l'Etat (ENTPE), one of the top French engineering schools located in Lyon, France. ENTPE students are required to undertake an internship between their second and third years of graduate study and in 2010, one student, Nhat Bui, contacted then UTRC Director Buz Passwell to inquire whether UTRC could provide an internship for him. That year, Professor Professor Darius Sollohub of the Architecture Department at the New Jersey Institute of Technology, agreed to supervise Nhat. From that point on, students have contacted the Center each year to inquire about internships. UTRC agrees to take a student if a PI agrees to supervise the student and has a research topic in which the student can assist. To-date fourteen students have undertaken 20-week internships with UTRC and another three have just

begun this year. In addition to Professor Sollohub, supervisors have included Drs. Alison Conway, Kyriacos Mouskos, Anil Yazici, Camille Kamga, Huiming Yin (Columbia), and Zhan Guo (NYU). In addition, Dr. Michel Ghosn of the Department of Civil Engineering at CCNY has also supervised ENTPE interns. Some of these students have even had the opportunity to return to the US to present their work at the Transportation Research Board's annual meeting in Washington, DC the following January. During their stay in NYC, students are supported by the French government and in return, as civil servants, they are required to work for the French government for eight years. Three students began interning in April 2014. They are Charlotte Gachon, Gaetan Petite, and Benjamin Demont. They are supervised by Michael Bobker, Baruch, Alison Conway, CCNY, and Kyriacos Mouskos, CCNY.

Additional information about their research follows below.

**Demont Benjamin**

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

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

**Charlotte Gachon**

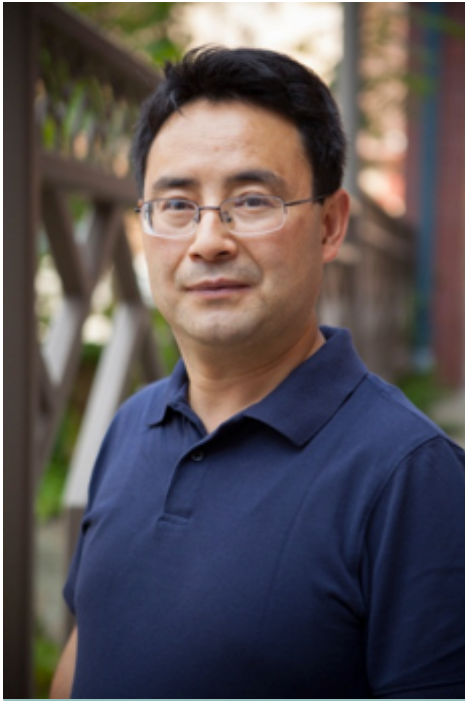
Charlotte is working at UTRC under the supervision of Michael Bobker, Director of the CUNY Building Performance Lab. She is working on the difference in building codes and standards in Europe and the United States and the different tools for measuring the energy performance. After her graduation, she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

**Gaetan Petite**

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

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

UTRC Faculty Profile



Huaizhu Oliver Gao
*Associate Professor
Department of Civil and
Environmental Engineering
Cornell University
Email: HG55@cornell.edu*

H. Oliver Gao is an award-winning professor at Cornell University and a world-renowned expert on transportation and environment/energy systems. Dr. Gao is an elected member in the graduate fields of 1) Cornell Institute of Public Affairs (CIPA), 2) Systems Engineering, 3) Transportation Systems Engineering in Civil and Environmental Engineering, 4) Air Quality in Earth and Atmospheric Science, and 5) Computing and Information Science at Cornell University. He is Editor-in-Chief of the leading international academic journal, *Transportation Research D: Transport and the Environment*. His research focuses on engineering/economics modeling and systems management solutions for sustainable and intelligent infrastructure and lifeline systems, low carbon and low emission transportation systems, environment (especially air quality and climate change)-energy systems, and the closely related issues of infrastructure and environment finance such as game theory and mechanism design for public-private partnership (PPP). He also studies alternative transportation/energy technologies, systems innovation, and green supply chain and logistics (e.g., sustainable food systems, quantifying and mitigating greenhouse gas emissions from food supply chains). He was a former member of the Transportation Research Board Committee on Transportation and Air Quality (ADC20), an academic member on the Federal Advisory Committee of US EPA MOVES model development, a current member of Transportation Research Board Committee on Maintenance Equipment (AHD60), and a member of the Cornell Atkinson Center for a Sustainable Future (ACSF). Gao received his graduate degrees (Ph.D. in Civil and Environmental Engineering, M.S. in Statistics, and M.S. in Agriculture and Resource Economics) from the University of California at Davis in 2004, M.S. degree in Civil Engineering in 1999, and dual undergraduate degrees in Environmental Science and Civil Engineering in 1996 from Tsinghua University, China. Gao also enjoys close and frequent intellectual interactions with his networks in finance—before joining Cornell,

Gao was a quantitative analyst (QUANT) in the mathematical and econometrical modeling division at a Wall Street hedge fund specializing in emerging markets such as the Brazil, Russian, India, and China (BRIC). Since 2005 he has contributed invited presentations to international conferences in France, the Netherlands, Belgium, China, and Korea as well as in the US. Dr. Gao was a visiting professor with the French Institute of Science and Technology of Transport, Development and Networks (the IFSTTAR) in the summer of 2011, working with the Département Aménagement, Mobilités et Environnement (AME) on GHG emissions from French Freight Transportation.

Over the past decade, Professor Gao's research on urban transportation infrastructure and air pollution/health has resulted in the development of an international leading research program in transportation and air quality studies at Cornell University. Through both solo efforts and collaborations with others, he has secured significant and continued research funding sponsored by US and international organizations such as US Department of Transportation, US Department of Agriculture, the Lloyd's Register Foundation (UK), US Environmental Protection Agency, etc.. His research publications have appeared in highly regarded transportation, environment, and management journals including *Environmental Science & Technology*, *Transportation Research*, *Energy Policy*, and *Atmospheric Environment*, etc. The outcome of his research has significant implications for improved capability to model, predict, and control transportation emissions and to evaluate their impacts on air quality, with the ultimate effect of optimizing transportation and air quality management strategies and thus improving public health.

Rudin Center's Event, Citi Bike Data Showcase

New York University's Rudin Center hosted a large event, Citi Bike Data Showcase, on May 28, 2014. The event brought a full, fun crowd to talk about visualizations, apps and nuances of Citi Bike use and analysis. Hosted by the Rudin Center and emceed by Noel Hidalgo of BetaNYC, the event featured several brief talks:

Dani Simons, Director of Marketing at NYC Bike Share, showed how the organization uses its data to manage bike fleets and where the system expansion may occur going forward.

Jeff Ferzoco (linepointpath) and Alex Chohlas-Wood (NYU CUSP) discussed their upcoming project of calculating bike salmoning.

Aaron Frait (Hunter College) showed his favorite coding tools for analysis and visualization, including some processes that can take three days to complete.

Ben Wellington (I Quant NY/Pratt) demonstrated the process of map creation using Citi Bike and NYC data with free coding tools.

Sarah Kaufman (NYU Rudin Center) discussed "Gender, Citi Bike, and the modern freedoms reflective of women's discovery of pantaloons".

For more detail, please visit the website at:

wagner.nyu.edu/rudincenter/2014/05/recap-and-photos-citi-bike-data-showcase/



Dani Simons (Citi Bike) presenting at the Citi Bike Data Showcase on May 28, 2014 (Photo credit to Jeff Ferzoco)

Amy Wu and **Luke Stern** (SVA) redesigning Citi Bike's checkout and kiosk process

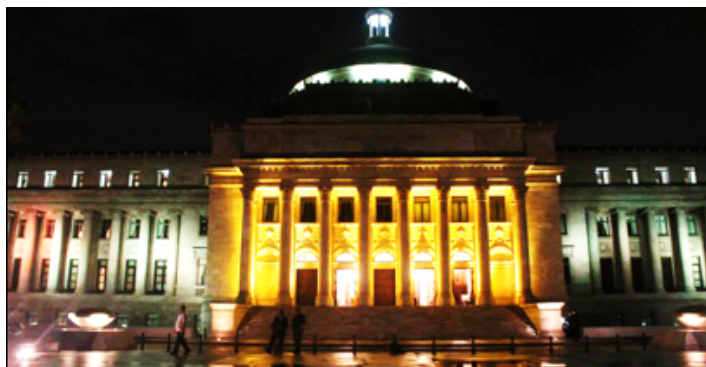
Frank Hebbert (Open Plans) closed out the event by showcasing his new #bikestoday tool, which automatically counts bikes riding past.

Successful Third Anniversary of the Decade of Action for Road Safety 2011-2020 in Puerto Rico



During the week of May 5-9 2014, the University of Puerto Rico at Mayagüez (UPRM) held several activities to commemorate the Third Anniversary of the Decade of Action for Road Safety 2011-2020, a Global Initiative of the World Health Organization (WHO). These activities were made in order to raise public awareness of road safety culture and to synchronize with the National Towards Zero

Death (TZD) initiative in the United States. The Third Anniversary of the Decade of Action for Road Safety was dedicated to Dr. Alberto Figueroa, President and CEO of the Metropolitan Bus Authority (MBA) and to Mrs. Iraida Meléndez, Vice President of Quality, Social Responsibility and Corporate Relations of MAPFRE Puerto Rico, for their respective contributions in education, research and raising awareness in road safety on the island. As part of the activities that were carried out, several landmarks on the island were illuminated using the yellow color to represent road user awareness.



The front facade of **San Juan State Capitol of Puerto Rico** was illuminated to represent Enforcement, which is one of the four E's (Engineering, Education, Enforcement and Emergency / Incident Management) as well as to restate the commitment of the Senate of the Commonwealth of Puerto Rico for approving new laws for making safer roads to all road users. The front facade of the Mayagüez City Hall was the other landmark that was illuminated representing the fifth E namely, Everyone. The Governor of the Commonwealth of Puerto Rico, the President of the Senate, the Chancellor of the University of Puerto Rico at Mayagüez and the Mayor of the City of Mayagüez dedicated Resolutions and/or Proclaims recognizing the Transportation Technology Transfer Center at the UPRM for their contribution and commitment in raising public awareness towards a road safety culture.

Past Events



UPR Mayagüez Mascot with
Road Safety Collar Emblem

Furthermore, as part of the education and awareness initiatives at UPRM, a collar was placed at the neck of the Bulldog mascot, using the yellow diamond shape emblem of the Decade of Action. The closing ceremony of the Third Anniversary included two mayor events, namely the dedication ceremony to Dr. Figueroa and Mrs. Meléndez and testimonies of parents that lost their loved ones in fatal road crashes involving alcohol. The MAPFRE Foundation also presented the book entitled *Absence: The emptiness caused by drunk drivers* that included other testimonies of victim's family as a result of a fatal road crash involving driving under the influence (DUI) of alcohol. The parents and relatives of two civil engineering students of UPRM that passed away in separate road crashes in spring 2014 were also present in this event in support of this initiative. Students and faculty advisors, representatives of Medical Services Office, Mothers Against Drunk Drivers (MADD), Luis A. Señeriz Foundation, FIESTA Program (Facilitators Instructors in Traffic Safety and Alcohol) sponsored by the Highway Traffic Safety Commission and the Puerto Rico Department of Transportation and Public Works were also present in this ceremony.

For additional information regarding future activities associated with the Decade of Action for Road Safety in the Commonwealth of Puerto Rico, please contact Dr. Benjamin Colucci, Spokesperson for this road safety initiative in the island.

Please visit our website at: prltap.org/eng/ or contact us on www.facebook.com/dasvpr

Upcoming Events

A “New World Order” for Ground Transportation Regulation IATR 2014 New Orleans Conference

This year's annual conference will be held at the Hyatt Regency from September 21st through the 24th, and further conference details, including sponsorship opportunities, registration and the program agenda will be posted and activated in the near future on IATR's website www.iatr.org. The conference will focus on the latest regulatory trends and best practices in technology, accessibility, safety and regulatory management. Also, the IATR will be unveiling its first draft of proposed model regulations for accessibility, and will hold an international public hearing to solicit comments from regulators and stakeholders alike.

IATR explained that “With the tremendous change enveloping regulators from every angle, the ‘New World Order’ theme is very fitting.”

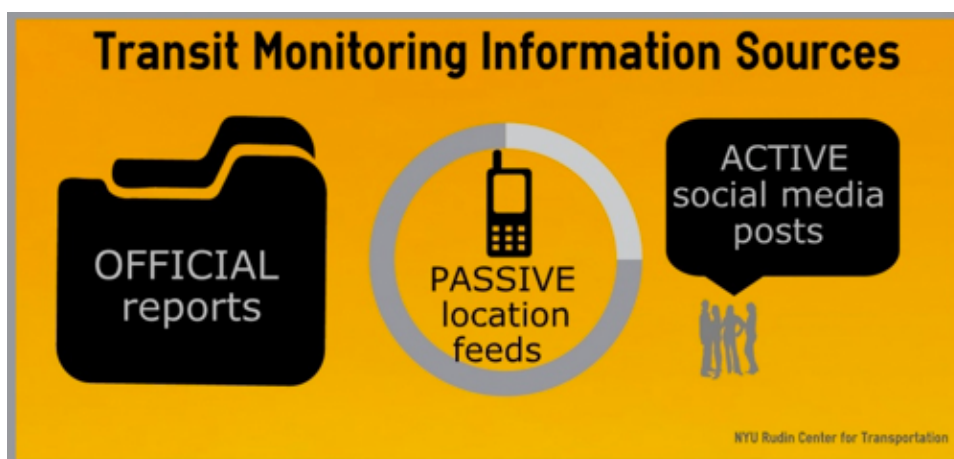
A description of the conference program is listed below.

1. **Accessibility – Model IATR Regulations**
2. **Smartphone Technology – Disruption, Ridesharing and Deregulation**
3. **Regulatory Reform & Management**
4. **Traffic Safety – “Vision Zero”**
5. **Working Groups and Break-Out Sessions**

Use of Web-Based Rider Input for Transit Management in the New York City Region

UTRC has released a final report for the research titled: “Use of Web-Based Rider Input for Transit Management in the New York City Region”, funded by UTRC. The principal investigators were Sarah Kaufman and Dr. Mitchell L. Moss from the Rudin Center for Transportation Policy and Management at the New York University.

“Emerging technologies offer transit agencies an opportunity to transform fundamental aspects of their operations and the way they communicate with their riders. With nearly ubiquitous smartphones and social media tools among growing ridership patterns, transit providers can use aggregate mobile phone data and social media posts to improve system management”.

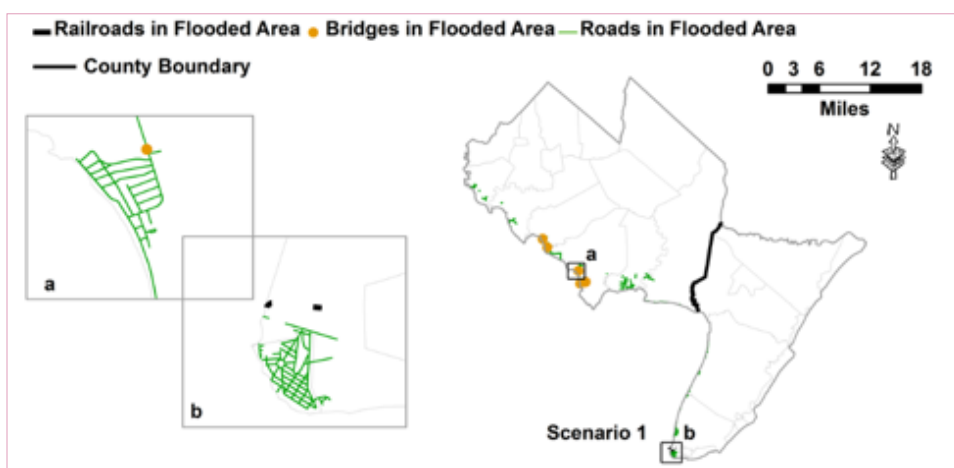


The full report is available for a free download at the UTRC website:
www.utrc2.org/research/projects/use-web-based-rider-input-transit-management

Vulnerability of Transportation System and Evacuation Plan for Coastal Flooding in Climate Change

UTRC has released a final report for the research titled: “Vulnerability of Transportation System and Evacuation Plan for Coastal Flooding in Climate Change”, funded by UTRC. The principal investigators were Dr. Hangson Tang, City College of New York and Dr. Steven I-Jy Chien, New Jersey Institute of Technology.

“This project develops a method for predicting coastal flooding considering climate change and sea level rise, and its impact on population and transportation network. In particular, a modeling framework has been proposed to predict flooding and estimate affected population and traffic systems needed for evacuation plans”.

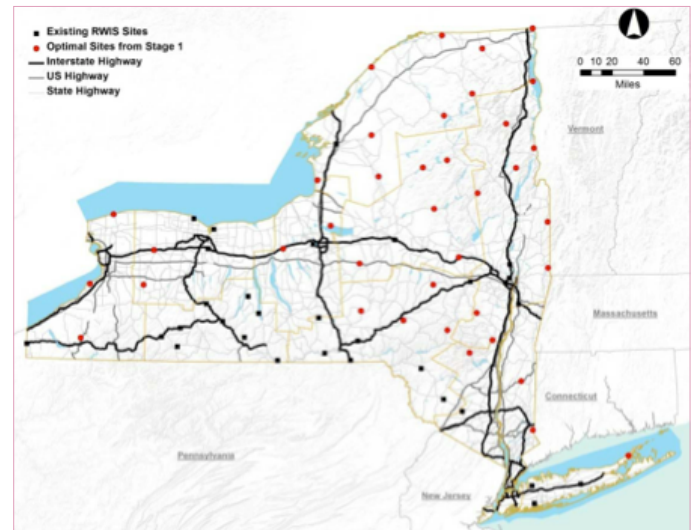


The full report is available for a free download at the UTRC website:
www.utrc2.org/research/projects/evacuation-plan-for-coastal-flooding

Road Weather Information System (RWIS) Statewide Implementation Plan

UTRC has released a final report for the research titled: “Road Weather Information System (RWIS) Statewide Implementation Plan”, funded by NYSDOT and UTRC. The principal investigator was Dr. Steven I-Jy Chien from the New Jersey Institute of Technology.

The objective of this project was to develop a plan for deploying a statewide RWIS to support both current NYSDOT operations and future MDSS applications. To develop the plan, various information and data sources were investigated, including the current condition of NYSDOT’s RWIS network, potential RWIS station sites, data needed for supporting statewide MDSS applications, and NYS meteorological zones. A GIS-based bi-level model was developed to optimize the RWIS network, considering contiguous segments having similar maintenance requirements and the associated characteristics (e.g., meteorology, traffic, etc.) that can affect the required road maintenance. It is expected that the proposed RWIS network in conjunction with NYSDOT’s MDSS will significantly reduce cost of road maintenance and increase safety, mobility, and productivity of, particularly in the adverse weather during winter time.



The full report is available for a free download at the UTRC website: www.utrc2.org/research/projects/road-weather-information-system

Data Collection and Econometric Analysis of the Demand for Nonmotorized Transportation



UTRC has released a final report for the research titled: “Data Collection and Econometric Analysis of the Demand for Nonmotorized Transportation”, funded by UTRC. The principal investigator was Dr. Ricardo A. Daziano from Cornell University.

Inductive loops for cycling counts in mixed traffic (left) and dedicated cycling paths (right)

In this project, a latent class model with a class assignment mechanism based on the latent bicycle status of the respondent was derived. Two segments were identified: more-skilled and experienced cyclists, versus less-skilled- and non-cyclists. The two segments have different sensitivities to the factors that may encourage or discourage riding a bike. For instance, slope inclination is considered almost 3 times as bad by less-skilled cyclists. Heavy traffic affects twice as much to less-skilled cyclists, who also consider rain to be 2.4 times more bothersome (and snow almost 4 times more bothersome) than more-skilled cyclists. On the other hand,

bike lanes are 1.6 times more appreciated by less-skilled cyclists. Because in cycling route decisions there is no direct monetary cost involved, to analyze differences in the taste parameters we have proposed to use the ratio of the marginal rate of substitution with respect to travel time. In addition, we measured the diminishing negative effect of a hilly topography (slope inclination) as a function of the physical condition of the cyclist.

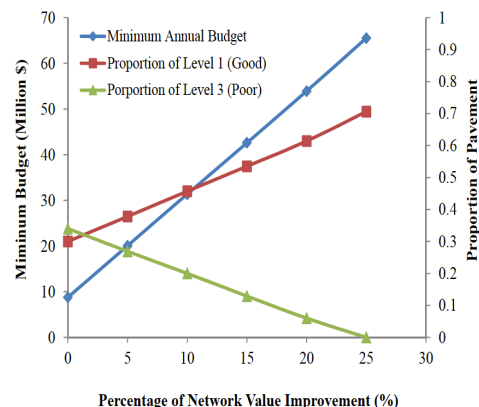
The full report is available for a free download at the UTRC website: www.utrc2.org/research/projects/data-collection-and-econometric-analysis

Optimum Fund Allocations to Rehabilitate Transport Infrastructure

UTRC has released a final report for the research titled: “Optimum Fund Allocations to Rehabilitate Transport Infrastructure”, funded by UTRC. The principal investigator was Dr. Jay Meegoad from New Jersey Institute of Technology.

Transportation Infrastructure in the US is in need of maintenance and rehabilitation. Preservation of road networks at an acceptable level of serviceability subject to the stringent yearly maintenance and rehabilitation (M&R) budgets is a major challenge for State Departments of Transportation (DOTs). Decision-makers are required to develop an optimum financial plan to minimize the total cost of maintenance and rehabilita-

tion for different expected improvement of the road network performance level during a given planning horizon. This research developed a network level budget planning model, a valuable tool for decision makers of DOTs to determine the required minimum network budget and optimal budget allocations. This decision tool can compute the minimum amount of investment needed for a pavement network over a certain planning horizon to achieve specific network level condition state and recommend the best allocation of available budget among competing projects for different treatment strategies of maintenance and rehabilitation each year.



The full report is available for a free download at the UTRC website: www.utrc2.org/research/projects/optimum-fund-allocation

Lighting Research Center Authors National Academies Report on New Roadway Lighting Technologies

The rapid development of lighting technologies, particularly solid-state systems using light emitting diodes (LEDs), has opened a universe of new possibilities as well as new questions about roadway lighting in the U.S., which for decades has been dominated by the use of high pressure sodium (HPS) lamps. Other light source technologies have also been angling for roadway market share. There is a strong need for objective technical information about new types of roadway lighting among transportation agencies. In response, the Transportation Research Board (TRB), part of the National Academies, initiated a project to evaluate new lighting technologies and identify new metrics for comparison. Lighting Research Center scientists John Bullough, who served as principal investigator, and Leora Radetsky co-authored the report, titled “Analysis of New Highway Lighting Technologies.”

A major challenge in assessing new roadway lighting technologies is that information for different systems is given in different forms, making comparisons difficult. Bullough and Radetsky systematically analyzed the performance of a number of representative luminaires of each type, and developed a consistent “data sheet” format, allowing direct comparisons. They found that many commercially available LED, ceramic metal halide, and plasma discharge roadway lighting systems can meet existing standards for lighting collector roads and freeways, achieving comparable or greater pole spacing

than HPS systems and in many cases, resulting in lower energy use. Importantly, say Bullough and Radetsky, not all systems of each type performed equally well. This underscores the importance of developing consistent data reporting formats such as those in their report.

The authors found that pole height was an important factor in the overall effectiveness of the roadway lighting system. A metric developed by the LRC, called luminaire system application efficacy (LSAE), can be used to optimize pole height and spacing to achieve optimal economic performance of different roadway lighting designs. Bullough and Radetsky also recommend that transportation agencies begin considering new benefit metrics for roadway lighting including photometric quantities based on mesopic vision, brightness perception and visual comfort.

The report by Bullough and Radetsky can be downloaded from the TRB website at: [onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-07\(305\)_FR.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-07(305)_FR.pdf).

Lighting Research Center Authors Present Their Work at SAE World Congress

On April 9, Nicholas Skinner, lead research specialist, and John Bullough, senior research scientist, both from the Lighting Research Center (LRC) at Rensselaer Polytechnic Institute, participated in the 2014 World Congress of the Society of Automotive Engineers (SAE) in Detroit. Skinner presented a paper co-authored with Bullough entitled “Impacts of Dynamic Rear Lighting on Driver Response,” describing a human factors study to investigate the visual benefits of sweeping animated rear turn signal indications, in which the direction of sweeping corresponds to the intended turn direction. Compared to conventional blinking turn signals, sweeping indications resulted in fewer misidentifications and fewer long response times exceeding 2.5 seconds, considered an upper limit for safe driver responses.

The paper is available online at papers.sae.org/2014-01-0434.

Bullough presented another paper, “Adaptive high beam systems: Visual performance and safety effects,” describing visibility analyses of newly proposed intelligent vehicle headlight systems in which the intensity of high beams are reduced locally in the direction of oncoming vehicles to prevent glare to other drivers while maximizing forward visibility. He estimated that such adaptive high beam systems could yield up to a 7% reduction in crashes compared to conventional low-beam headlights at night.

The paper by Bullough is also available online, at: papers.sae.org/2014-01-0431.

Both studies were supported by the Transportation Lighting Alliance (members: Audi, Automotive Lighting, Hella, OSRAM SYLVANIA, Philips, and Varroc Lighting).

NYU Rudin Center’s Director and PANY/NJ, Publishes a Report on, “A Port Authority That Works”

Dr. Mitchell L. Moss, Director of the Rudin Center for Transportation Policy and Management at NYU, and Hugh O’Neill, President of Appleseed, an economic development consulting firm based in New York City and the former (1985 to 1991 Assistant Executive Director of the Port Authority of New York and New Jersey published a report on “A Port Authority That Works”.

The full report can be accessed at Rudin Center’s website: wagner.nyu.edu/rudincenter/wp-content/uploads/2014/04/PortAuthorityFINAL_Print.pdf

A Port Authority That Works



UTRC's Newly Funded Projects

Project	PI	Institution
Effect of plug in hybrid electric vehicle adoption on gas tax revenue, local pollution, and greenhouse gas emissions http://www.utrc2.org/research/projects/plug-in-hybrid-electric-vehicle-adoption	William Riddell	Rowan
The Ties that Bind: Developing a Bi-national Transportation-Combined Economic Simulation Model to Assess Security and Policy Implications of US-Canada Border Bridges http://www.utrc2.org/research/projects/bi-national-transportation-combined-economic-simulation-model	Dr. JiYoung Park	Buffalo
Evaluation of Public-Private Partnership Contract Types for Roadway Construction, Maintenance, Rehabilitation, and Preservation www.utrc2.org/research/projects/evaluation-public-private-partnership	Panagiotis Anastasopoulos	Buffalo
Freight Costs at the Curbside www.utrc2.org/research/projects/freight-costs-curbside	Xiaokun (Cara) Wang	RPI
Truck Driver Fatigue Assessment using a Virtual Reality System www.utrc2.org/research/projects/truck-driver-fatigue-assessment-using-virtual-reality-system	Yusuf A. Mehta	Rowan
Evaluating the Role of Private Investment in Life Cycle Management of New York State's Infrastructure Assets www.utrc2.org/research/projects/Management-of-New-York-State-Infrastructure-Assets	Dr. Huaizhu (Oliver) Gao	Cornell
Development of a New Connected Eco-Driving Technology at Signalized Intersections with Adaptive Signal www.utrc2.org/research/projects/eco-driving-technology-at-signalized-intersections	Dr. Elena Prassas	NYU-Poly
Analyzing Willingness to Improve the Resiliency of New York City's Transportation System www.utrc2.org/research/projects/improving-resiliency-of-new-york-city-transportation-system	Dr. Ricardo A. Daziano	Cornell
Understanding Transit Finance: An Analysis of Transit Funding Around the World www.utrc2.org/research/projects/understanding-transit-finance-analysis-transit-funding-around-world	Dr. David King	Columbia
Real-time Estimation of Transit Origin-Destination Patterns and Delays Using Low-Cost Ubiquitous Advanced Technologies www.utrc2.org/research/projects/real-time-estimation-transit-origin	Dr. Kaan Ozbay, Dr. Hani Nassif, Dr. Neveen Shlayan	NYU, Rutgers, SUNY Maritime

UTRC Faculty's News/Articles, Publications and Presentations

UTRC's Research Reports on "Pneumatic Tubes" and "Collection of Wastes from the Roosevelt Island" on NYSDA's Website

Principal Investigators: Dr. Camille Kamga, Benjamin Miller, Juliette Spertus

- Miller, B., & Spertus, J. (2013, July). A Study of the Feasibility of Pneumatic Transport of Municipal Solid Waste and Recyclables in Manhattan Using Existing Transportation Infrastructure. . Retrieved , from <https://www.nysda.ny.gov/-/media/Files/Publications/Research/Transportation/Feasibility-of-Pneumatic-Transport.pdf>
- Miller, B., & Spertus, J. (2013, July). Eliminating Trucks on Roosevelt Island for the Collection of Wastes. . Retrieved , from <https://www.nysda.ny.gov/-/media/Files/Publications/Research/Transportation/Eliminating-trucks-on-Roosevelt-Island-for-the-Collection-of-Wastes.pdf>
- Spertus, J., Miller, B., Kamga, C., Douglass, L., and Ross, B. (2014) Tubes vs. Trucks: A Comparative Analysis of the Impacts of Alternative Waste-Collection Methods with Specific Reference to Roosevelt Island in New York City, Métropolis | Flux, 2014/1 - N° 95, pp 6-17.

News from NYU Rudin Center for Transportation Policy & Management

- Rudin Center's Director, **Mitchell Moss** on CBS talking about; "why no cities want to host the Winter Olympics": www.youtube.com/watch?v=agLejq-Gic&feature=em-share_video_user
- Rudin Center's Digital Manager, **Sarah Kaufman** on Brian Lehrer TV, discussing Citi Bike's one year anniversary: www.youtube.com/watch?v=8wK8Zn34VqQ&t=28m20s
- **Sarah Kaufman** is a Google Fellow for the Personal Democracy Forum: techpresident.com/node/25064

News from the University of Albany/SUNY

The following article will be printed in the July 2014 issue of Geoinformatica, a highly regarded journal in the area of GIS.

- **J. Muckell, P. W. Olsen Jr., J. Hwang, C. T. Lawson and S. S. Ravi**, "Compression of Trajectory Data: A Comprehensive Evaluation and a New Approach", Geoinformatica, Vol. 18, Issue 3, July 2014, pp. 435–460. (An online version of the article has been available through the homepage of the Geoinformatica journal since January 2014.)
- The following paper has been accepted for presentation at the prestigious ACM Conference on Knowledge Discovery and Data Mining (ACM KDD) to be held in New York City, NY during August 2014.

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