Research News
Summer 2011

Region II—University Transportation Research Center

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Director's Message

In June of 2011, the UTC grantees received notification from the U.S. DOT's Research and Innovative Technology Administration (RITA) relative to conducting a competition for University Transportation Centers (UTC) Program grants, for the purpose of performing multi-modal and multidisciplinary research, education, and technology transfer activities in support of Departmental priorities. The plan for the competition has been formally announced and a notice was published in the Federal Register on Friday, June 24, 2011.

We, at UTRC, are embracing the RITA initiative and look forward to participating in this competitive process. Since its inception in 1987, our consortium, in conjunction with institution members, affiliate faculty, students, principal investigators, and staff, continue to demonstrate outstanding abilities and competence in research; technology and education resources; leadership; multi-modal research capability; commitment to transportation workforce development programs; technology transfer capability; the use of peer review; and effective partnerships to advance diversity. This process presents us with a golden opportunity to strengthen and enhance our programs, develop new ideas, and create additional partnerships.

I would like to congratulate Prof. Buz Paaswell on his election to the grade of ASCE Distinguished Members. Buz is to be inducted at a ceremony in conjunction with ASCE's 141st Annual Civil Engineering Conference, on October 20, 2011, in Memphis, TN. Additionally, I would like to extend my congratulations to all of our colleagues on their accomplishments during the semester. As indicated, in this newsletter, our faculty affiliates have successfully published in peer-reviewed journals; contributed to books; and received prestigious national awards.

We welcome Ms. Nathalie Martinez, Research Associate, to our UTRC staff family. Nathalie is a CCNY graduate, and received a Bachelor's Degree in Environmental Engineering.

Camille Kamga, Acting Director

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NEWS & NOTES

Buz Elected to the Grade of ASCE Distinguished Members

Professor Robert E. Paaswell has been elected to the grade of ASCE Distinguished Members on April 1, 2011. Distinguished members are recognized for their eminence, and chosen by the Society's Board of Directors for an honor second only to becoming ASCE President. The 2011 class will be inducted at a ceremony in conjunction with ASCE's 141st Annual Civil Engineering Conference on October 20, 2011 in Memphis, TN. For more information, please visit ASCE Website.

UTRC's Penny Eickemeyer Appointed to TRB Committee

Penny Eickemeyer, Assistant Director for Program Management at UTRC was recently appointed to the AR010 Intercity Passenger Rail Committee of the Transportation Research Board. She will serve as the editor of the Committee's newsletter, Intercity *Rail Passenger Update.* The Committee is concerned with research that will lead to better planning and implementation of intercity passenger rail, with particular emphasis on the full range of high-speed systems including new technology. As editor, Penny will use the newsletter to facilitate communication about the latest research on these issues encompassing both domestic and international initiatives as well as policy and legislative developments, and by doing so, endeavors to further the development of intercity passenger rail.

UTRC Project Presented at the First University Research Technology Transfer Day

The Council of University Transportation Center organized a one-day demonstration/exhibition of prominent university transportation products, that are developed with US DOT sponsorship, in partnership with the DOT's Research and Innovative Technology Administration (RITA). This event was held on April 6, 2011, in the USDOT Headquarters building in Washington, D.C. The purpose of this event was to highlight the accomplishments and show the impact of DOT's college and university based research and education programs. In addition, this event highlighted the transfer of technology from the university transportation programs in use at various federal, state and local agencies.

A joint signature project between UTRC and Cisco was presented in this event. USDOT Deputy Secretary, John Porcari; RITA Administrator, Peter Appel, and FHWA Deputy Administrator, Gred Nadea, made remarks during the event.

Dr. Camille Kamga , UTRC, and Sam Wade , Cisco at the 1st University Research Technology Transfer Exhibition Day
Photo by RITA

USDOT Deputy Secretary , John D. Porcari, addressed the participants at 1st University Research Technology Transfer Day

UTRC's Faculty Leads the First Panel on University's ITS Research at the 2011 ITS-NY Annual Meeting

From L to R: Jonathan Muckell, (University at Albany/SUNY), Dr. Adel Sadek (University at Buffalo/SUNY), Dr. Camille Kamga (UTRC/CCNY), Christopher Jones (NYS Thruway Authority), Dr. Kaan Ozbay (Rutgers University), and Dr. Alain Kornhauser (Princeton University)

Photo by Matt Ficarra

The Intelligent Transportation Society of NY held its 18th Annual Meeting and Technology Exhibition on June 9-10, 2011 at Saratoga Springs, NY. Dr. Kamga , ITS Board Member, was a moderator for the panel: Current ITS University Research and Projects. The panel speakers, current UTRC consortium members, Jonathan Muckell, a Ph.D. Candidate at SUNY/Albany, Dr. Adel Sadek, SUNY Buffalo, Dr. Camille Kamga, UTRC/CCNY, Dr. Kaan Ozbay, Rutgers University, and Dr. Alain Kornhauser, Princeton University, presented ITS related research projects performed at their institution.

The 2011 ITS-NY Annual Meeting Photos are posted on the ITS-NY website's Library Page (www.its-ny.org). All presentations are also posted on the Library Page of the ITS-NY website.

Direct Link for more Photos of the ITS-NY Annual Meeting:http://www.its-ny.org/pdf/ITS-NYAnnMtgPhotos2011.pdf

The USDOT's Research and Innovative Technology Administrator Visits UTRC

The Administrator of the Research and Innovative Technology Administration (RITA), Peter H. Appel, spent an entire day at UTRC on March 4, 2011, meeting with UTRC staff, faculty, administrators, students, and agency partners. Administrator Appel was accompanied by Mr. Alasdair Cain of RITA and the United States Merchant Marine Academy (USMMA). During his visit, Appel learned how UTRC utilizes their federal grants and engages in projects that assist in the implementation of USDOT goals/objectives relative to planning, safety, reduced congestion, global connectivity, environmental stewardship and security, preparedness and response. .

During the morning activities of the visit, UTRC staff welcomed the RITA and USMMA visitors and presented an overview of the day followed by presentation and discussion on UTRC administration and financial management. The afternoon session focused on UTRC activities reflecting the many research and technology transfer projects, educational programs performed by UTRC, and UTRC's successful collaboration with local transportation agencies and partners. The afternoon session was attended by agency partner representatives, students and faculty from consortium members, RITA, USMMA, and UTRC Staff.

Peter Appel - RITA Administrator, Jonathan Peter - College of Staten Island/CUNY, and Captain David B. Moskoff - the United States Merchant Marine Academy

Awards & Recognitions

Abhishek Singhal Wins Best Paper Award at 2011 ITS-NY Annual Meeting

Mr. Abhishek Singhal, Research Assistant at University Transportation Research Center, has won the award for Best Student ITS Essay presented by the Intelligent Transportation Society of New York (ITS-NY). Mr. Singhal was recognized at the ITS-NY Eighteenth Annual Meeting and Technology Exhibition held at Gideon Putnam Hotel, Saratoga Springs, New York on June 9th, 2011. Mr. Singhal's paper, "Application of Sensors & Remote Monitoring Technology to Evaluate Anti-corrosive Properties of a Concrete Bridge Deck" was based on the research sponsored by the FHWA under the Innovative Bridge Research and Construction Program. Mr. Singhal is currently pursuing PhD (Transportation) at The City College of New York. For more information about ITS-NY, please visit http://www.its-ny.org/.

ITS-NY Elected President, Dr. Isaac Takyi, Presenting ITS Best Student Essay Award to Abhishek Singhal, a Research Assistant at UTRC

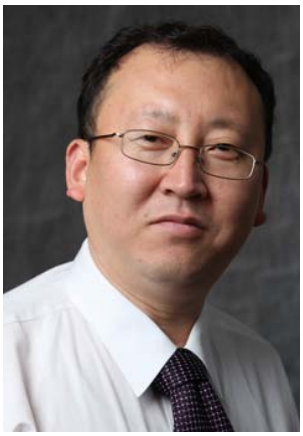
Dr. Adel Sadek, University at Buffalo, Received an "IBM Smarter Planet Faculty Innovation" Award

Sadek has received an IBM Smarter Planet Faculty Innovation Award to develop an eight-lecture course on "Advanced Technology Solutions for a Sustainable Transportation System." He describes some of the technologies that will be explored in the course in a video at http://bit.ly/l9ULhN.

For more information, click here.

RPI's Professor Xuegang (Jeff) Ban Received NSF CAREER Award

Young Faculty Researcher Seeks To Make Driving Smoother, Safer Using Mobile Phone and GPS Data



Xuegang (Jeff) Ban, Assistant Professor in the Department of Civil and Environmental Engineering at Rensselaer Polytechnic Institute, has won a prestigious Faculty Early Career Development Award (CAREER) from the National Science Foundation (NSF).

Ban will use the five-year, $400,000 award to study how mobile devices including GPS and cellular phones can help monitor and optimize traffic systems, and reduce roadway congestion.

"This is a tremendous honor for Dr. Ban, and we are extremely proud of him for being selected as an NSF CAREER Award recipient," said David Rosowsky, Dean of the School of Engineering at Rensselaer. "Jeff is conducting research critical to our nation's future and is an emerging authority in the areas of transportation network modeling, traffic simulation, and Intelligent Transportation Systems. We are thrilled to count Jeff among the growing number of NSF CAREER Award recipients at Rensselaer. We look forward to watching his academic career here thrive and flourish."

Ban's CAREER program, titled "Using Mobile Sensors for Traffic Knowledge Extraction and Dynamic Network Management," seeks to develop the foundations for an entirely new area of transportation science. He aims to tackle the key challenges of using cell phones, GPS, and other devices to provide data that can be incorporated into next-generation traffic monitoring and management systems. Current systems rely on fixed data collection points, which suffer from limited coverage and are slow to adapt to traffic congestions, accidents, and emergencies. Ban's vision is to actively learn traffic system states and better manage the system based on "crowd sourcing" mobile device data that protects a driver's anonymity while actively responding to changing traffic conditions.

The CAREER Award is given to faculty members at the beginning of their academic careers and is one of NSF's most competitive awards, placing emphasis on high-quality research and novel education initiatives.

For more information on Dr. Ban and his research at RPI, Please visit:
http://www.rpi.edu/~banx/
http://transp.rpi.edu/~CITE/publications_ban.shtml

Staff News

New Staff at UTRC

UTRC welcomes **Ms. Nathalie Martinez**, Research Associate, to our UTRC staff family. Nathalie is a CCNY graduate, and received a Bachelor's Degree in Environmental Engineering. She will be pursuing her Master's Degree in Transportation Engineering at CCNY.

Prior to joining UTRC, Nathalie was employed as a college assistant in the Environmental Health and Occupational Safety Department, at The City College of New York. She was responsible for evaluating and reporting on problems affecting public health on the campus. As an intern in the Division of Environmental Remediation, NYS Department of Environmental Conservation, she reviewed technical documents on petroleum spill cases. Martinez also interned at the Dormitory Authority State of New York evaluating and reporting on worksite conditions and progress to ensure adherence to safety standards.

As a member of Engineers Without Borders, Nathalie participated in a ventilation project in Honduras. This project consisted of constructing and retrofitting adobe stoves and chimneys to achieve better combustion and provide better ventilation in 6 homes.

A Visiting Student from France at UTRC

UTRC is also pleased to welcome **Mr. Pierre Emmanuel Fatisson**: a visiting scholar from Paris, France. Pierre has a Bachelor's Degree in Civil Engineering and Urban Planning from the French Engineering School; Ecole Nationale des Travaux Publics de l'Etat (ENTPE). He also received an Engineering Diploma from ENTPE. He is pursuing his Masters in Transportation Network and Economy from the University of Lyon – 2. Pierre is also a civil servant of the French Ministry of Environment, Sustainable Development and Transports.

Currently, Pierre is working with a UTRC research team, on a project related to the potential for freight delivery using bicycles in NYC. The project focuses on a high-level feasibility study examining the potential of implementing micro-distribution centers, in New York, to receive freight delivery by truck and then using freight tricycles for last-mile delivery. He is working with operators in Paris and London to become familiar with the operations in those cities and eventually perform a comparative study of the Economy, Infrastructure, and Regulatory Environment in New York.

New Staff at VTC, Rutgers University

David Aimen, AICP/PP, joined the Alan M. Voorhees Transportation Center in 2011 as Assistant Director, Planning and Technical Assistance. Mr. Aimen has 25 years of experience, primarily as a private sector consultant, managing and researching studies on planning and economics topics including transportation policy, market research, demand forecasting, economic and fiscal analysis, socioeconomic impact assessment, and strategic economic development. In recent years, Mr. Aimen has provided technical advisory services for policy, planning and development projects focusing on Title VI, environmental justice, and the socioeconomic impacts of transportation. This work has been undertaken for Federal Highway Administration (FHWA), metropolitan planning organizations, state transportation departments, and transit agencies. He is currently the *Principal Investigator for Practical Approaches for Involving Traditionally Underserved Populations in Transportation Decisionmaking*, funded under the National Cooperative Highway Research Program (NCHRP), which will present a toolkit of case studies, effective practices, tools and techniques, and data sources relevant to public and private sector practitioners at each stage of transportation decisionmaking. He is a member of the Transportation Research Board's Environmental Justice in Transportation Committee. Mr. Aimen received a B.A. with degrees in Sociology and Communication Arts from the University of Wisconsin – Madison and a Master of City and Regional Planning degree from Rutgers University.

UTRC FACULTY PROFILE

Catherine T. Lawson
Associate Professor
University at Albany/SUNY

Catherine T. Lawson is the Director of the Master's in Regional Planning Program, an Associate Professor in the Geography and Planning Department, and a member of the faculty of the Informatics Ph.D. Program at the University at Albany, in Albany, New York. She received her Ph. D. in Urban Studies/Regional Science at Portland State University (PSU), in Portland, Oregon in 1998. She has a Master's in Applied Economics and a Master's in Urban and Regional Planning, both from the PSU. She has a dual BA in Accounting and Economics from Western Washington University. Dr. Lawson was the first manager of the Transportation Research Group at PSU, an effort that brought transportation planners and researchers, civil engineers involved in Intelligent Transportation Systems (ITS), and freight logistics professionals together to discuss collaborative research. Dr. Lawson came to the University at Albany in 2000.

Dr. Lawson has been active in the area of trucks and freight data research since the mid-1990s. She helped develop the first description of the use of archived Intelligent Transportation Systems (ITS) data in the form of "passive data" for freight applications in the Transportation Research Board's *A Concept a National Freight Data Program: Special Report 276*. She has continued her research in the development of computerized methods for "harvesting" passive data and using various software packages, including Geographic Information Systems (GIS), to aid in the mapping of actual truck flows and adjacent economic activities. She chaired the National Cooperative Freight Research Program (NCFRP) *Report 9: Guidance for Developing a Freight Transportation Data Architecture*. She is currently a member of the research team for *NCFRP 20: Sub- national Commodity Flows*, with Cambridge Systematics and *NCFRP 25: Freight Trip Generation and Land Use,* with Rensselaer Polytechnic Institute (RPI). She was recently appointed to the NCFRP Oversight Committee.

In addition to using archived ITS data for freight applications, Dr. Lawson has conducted research with on-body Global Positioning Systems (GPS) for NYMTC, GPS for on-time performance analysis for NYSERDA, developed the *Traphic Tool* to analyze truck behaviors for NYSDOT, and the *WIMWEB* application for FHWA for the Vermont Heavy Truck Study, both with her Research Associate, Alex Muro.

Dr. Lawson continues to leverage previous research conducted through the UTRC Advanced Technology Initiative, *Compression and Mining of GPS Trace Data: New Techniques and Applications for Transportation*, with Professors Ravi and Hwang, both from the Department of Computer Science at the University at Albany, and Jonathan Muckell, a Ph.D. candidate in the Informatics Program. This research includes the evaluation of GPS trace data compression techniques and the development of a Spatial Quality Simplification Heuristic (SQUISH) algorithm, capable of compressing data to 10% of its original size, while preserving accuracy and flexibility.

Dr. Lawson is active in Transportation Research Board, including serving a second term as the Chair of the Urban Transportation Data and Information Systems (ABJ30) Committee, after serving for nine years as a member and three years as the Secretary for the Committee. ABJ30 is responsible for the Subcommittee on the Census, and has co-responsibility for the Subcommittee on Archived Data Users Services. As Chair of ABJ30, Dr. Lawson is playing a leadership role in the establishment of several new TRB subcommittees, including Travel Time, Speed and Reliability; Bike and Pedestrian Data; and Health and Transportation. These areas will be critical to research areas such as livability, performance metrics, and the development of cost-effective national, state, regional and local data programs.

RECENT EVENTS

Visiting Scholar Seminar J.D. Margulici on "Intelligent Transportation: Trends and Perspectives"

J. D. Margulici, founder of Novavia Solutions, LLC and former Associate Director of the California Center for Innovative Transportation (CCIT) presented a Visiting Scholar Seminar to the UTRC audience on April 8th. J.D. has a dozen years of experience implementing and marketing information technology, with primary applications to roadway traffic management, public transit, airport operations, and air traffic control.

In his presentation, he reviewed major trends in information and communication technologies and demonstrated how each of them is driving innovative transportation services. He mentioned that we should attempt to envision how those trends might develop in the future, so that we can finally examine some of their implications for travel demand and network management. There lie both challenges and opportunities for transportation engineers and planners, but either way, profound changes appear inevitable.

For details and to register, follow this link: http://www.utrc2.org/events/events.php?viewid=290 .

Mr. Margulici during the presentation at Baruch College

UTRC Book Talk Rachel Weinberger Presented the Major Findings of Her Book "Auto Motives"

Rachel Weinberger, an Associate Professor at the University of Pennsylvania, captured the major findings of her book in a relatively new UTRC Book Talk Series on April 28th.

Book Synopsis

Dr. Weingberger sharing the major findings of her book "Auto Motives" at The Bernard and Anne Spitzer School of Architecture, CCNY

Our global reliance on private automobiles as the primary means for transporting individuals is likely to become increasingly problematic over the next ten to 20 years. International traffic forecasts suggest that the total number of private automobiles will grow from approximately 800 million in 2002 to more than two billion in 2030. At the same time, lack of automobility leads to social exclusion and hinders positive economic outcomes for many segments of society. A large part of the popularity of automobiles is that they allow us to decide when and where we travel and to control our micro-environments while we do so. While the individual benefits of car-based travel are significant, the wider environmental and social costs of automobiles also are apparent and the need for political intervention to control some of their worst effects is increasingly accepted within policy circles internationally.

It is within this context that Auto Motives critically evaluates the evidence for better understanding of "what drives us to drive?" Uniquely, it draws together and explains the diverse theoretical literatures that pertain to people's auto motives and considers these theories in the light of empirical research of what actually informs our automobile decisions and behaviours. With contributions from leading academic experts from around the world, its core and narratives are presented to offer widespread appeal to a wide-ranging audience. The book is aimed at students, researchers, arguments policymakers and practitioners from a growing spectrum of disciplines with and interest in understanding the motivations and decision processes underpinning the public's overwhelming preference for the car as the primary means of people-based movement. We hope that it will help to encourage further dialogue, interaction and future research collaborations on this important topic.

UPCOMING EVENTS

Visiting Scholar Seminar Series

"How Are State DOTs Going to Pay for Future Transportation Investments? A Comparative Review of Alternative Road User Financing Approaches"

Dr. John Collura, Professor at the University of Massachussetts at Amherst, will present the Visiting Scholar Seminar to the UTRC audience on September 23rd. Dr. Collura has also served as a Professor and Director of the Advanced Transportation Systems and Infrastructure Programs at Virginia Tech; as a Faculty Fellow at the USDOT Volpe National Transportation Systems Center; as a Distinguished Scholar with the Intelligent Transportation Society of America at the Autostrade in Florence, Italy; and as a visiting faculty member at Stanford University.

For more details and registration information, please visit our website at
http://www.utrc2.org/events/index.php

Date & Time: September 23rd, 2011 from 9:30 am to 12:00 pm
Loction: Baruch College Conference Center

Note: Dr. Collura will also be presenting at NJDOT office at Trenton on September 22nd under UTRC Joint Technology Transfer Program with NJDOT.

"State of Good Repair: Can We Really Achieve It in Today's Environment?"

Dr. Michael Meyer, Director of the Georgia Transportation Institute , will deliver a Visiting Scholar Seminar to the UTRC audience on October 7th. Dr. Meyer is also a professor of Civil and Environmental Engineering, and former Chair of the School of Civil and Environmental Engineering at the Georgia Institute of Technology. From 1983 to 1988, Dr. Meyer was Director of Transportation Planning and Development for Massachusetts where he was responsible for statewide planning, project development and engineering, traffic engineering, and transportation research. Prior to this, he was a professor in the Department of Civil Engineering at M.I.T.

For more details and registration information, please visit our website at
http://www.utrc2.org/events/index.php

Date & Time: October 7th, 2011 from 9:30 am to 12:00 pm
Location: Baruch College Conference Center

Note: Dr. Meyer will also be presenting at NJDOT office at Trenton on October 6th under UTRC Joint Technology Transfer Program with NJDOT.

"The Real Time City"

Dr. Carlo Ratti is Director of Senseable City Laboratory and an Associate Professor at the Massachusetts Institute of Technology. He graduated from the Politecnico di Torino and the École Nationale des Ponts et Chaussées in Paris, and later earned his MPhil and PhD at the University of Cambridge, UK. Ratti has coauthored over 200 publications and holds several patents. His work has been exhibited worldwide at venues such as the Venice Biennale, the Design Museum Barcelona, the Science Museum in London, GAFTA in San Francisco and The Museum of Modern Art in New York. His Digital Water Pavilion at the 2008 World Expo was hailed by Time Magazine as one of the Best Inventions of the Year. He has been included in Esquire Magazine's Best and Brightest list, in Blueprint Magazine's 25 People who will Change the World of Design and in Forbes Magazine's People you need to know in 2011. He will discuss how the increasing deployment of sensors and hand-held electronics in recent years is allowing a new approach to the study of the built environment.

For more details and registration information, please visit our website at
http://www.utrc2.org/events/index.php

Date & Time: November 11th , 2011 from 9:30 am to 12:00 pm
Location: Baruch College Conference Center

2011 International Green Energy Economy Conference

The 2011 International Green Energy Economy Conference will take place July 28-29, 2011, at the Renaissance Arlington Capital View Hotel, located in Crystal City, Virginia.
The economy of the 21st century must become a green economy, built upon foundations of innovation, clean energy, green jobs, and sustainability. National and global security is dependent upon economies that support their populations and protect the environment. Many nations are seeing investment in clean energy as key to short-term economic recovery and long-term prosperity. These include the United States, South Korea and China.
John Rynn, Senior Fellow at CIUS will be presenting at the conference.
For more information, Please visit this:
http://www.greenenergyeconomy.org/

RESEARCH HIGHLIGHTS AND PUBLICATIONS

UTRC Sponsored Research Five Projects Completed

Feasibility Study for Freight Data Collection

- *José Holguín-Veras, Ph.D., P.E.*
Professor and Director of the Center for Infrastructure, Transportation and the Environment, Rensselaer Polytechnic University
- *Xuegang (Jeff) Ban, Ph.D.,*
Assistant Professor, Department of Civil and Environmental Engineering, Rensselaer Polytechnic University

The New York City (NYC) metropolitan region is home to close to 20 million residents, more than 600,000 business establishments, more than 1.3 million registered trucks, and more than 8.8 million employees. Every year, more than 80 million trucks cross the toll facilities administered by the various transportation agencies (New York Metropolitan Transportation Council, 2004). This traffic translates into a total amount of cargo of about 200 million tons. The bulk of these goods accounts for 79% of the region's goods while the national average is 44%. As freight transportation is becoming more critical to the region, NYMTC has recognized the need to take proactive steps to enhance the overall efficiency of the freight transportation system, as a way to enhance the region and the Nation's competitiveness.

The Final Report can be accessed at
http://www.utrc2.org/research/assets/190/NYMTC-Freight-Data-Final-rpt1.pdf

Feasibility of Freight Villages in the NYMTC Region

- *Maria Boilé, Ph.D., Dr. Sotiris Theofanis, Ph.D., and Kaan Ozbay, Ph.D., Rutgers University*
- *Anthanasios Ziliaskopoulos, Ph.D., University of Thessaly*
- *Pippa Woods, NJ Transit*
- *Allison L. C. de Cerreño, Ph. D., and Marta Panero, Ph.D., New York University*
- *Preston Gilbert, ESF/SUNY*

In previous tasks, one of the key objectives of the project, meaning determine the feasibility of freight village development in the NYMTC region, has been addressed. The study conducted an extensive review of freight village facilities from all over the world and studied their features and characteristics. A generic freight village model was developed. The study also conducted a thorough analysis of the characteristics of freight movement in the region. Several sites were identified, with key features and characteristics, required for consideration for freight village development. These potential sites were then analyzed more thoroughly. Their analysis and evaluation indicated that they are suitable for development as freight villages.

The Final Report can be accessed at
http://www.utrc2.org/research/assets/119/Final_Freight-Villages1.pdf

Analysis of Bicycling Trends and Policies in Large North American Cities: Lessons for New York

- *John Pucher, Ph. D.,*
Professor, Bloustein School of Planning and Public Policy Rutgers University

- *Ralph Buehler, Ph. D.,*
Assistant Professor in Urban Affairs & Planning, Virginia Tech

The US Department of Transportation (1994 and 2004) has set a goal of increasing the percentage of trips by bicycle while improving safety. The rationale for promoting cycling is that it would shift some trips from the car, thus reducing roadway congestion, parking problems, air pollution, noise, and energy use. Moreover, both the US Department of Transportation and the Centers for Disease Prevention and Control advocate active transport such as bicycling for physical activity that would help combat the worsening obesity epidemic.

The Final Report can be accessed at
http://www.utrc2.org/research/projects.php?viewid=176

Barricade Lighting System

- *John D. Bullough, Ph.D. ,*
- *Mark Rea, Ph.D.,*
  Lighting Research Center
  Rensselaer Polytechnic Institute

The Lighting Research Center (LRC) at Rensselaer Polytechnic Institute recently completed a study of work zone signal lighting entitled "Barricade Lighting System," sponsored by the University Transportation Research Center (UTRC) with in-kind support from the New York State Department of Transportation and LumenTech Innovations. The objective was to evaluate an innovative signal lighting concept for work zones. The final report to the Region 2 UTRC was published in April, and authored by LRC researchers John Bullough, Jeremy Snyder, Nicholas Skinner, and LRC Director Mark Rea.

The study proposes a novel lighting concept for work zones. Presently, standard barricade warning lights used in work zones have channelizing and warning functions. Yellow flashing lights are utilized regardless of specific activities that may be taking place in the work zone.

The Final Report can be accessed at http://www.utrc2.org/research/assets/199/UTRC-BLS-Report1.pdf

Potential Long Island Intermodal Sites Study

- *Robert E. Paaswell, Ph.D., Principal Investigator*
  CUNY Institute for Urban Systems
- *Penny Eickemeyer, University Transportation Research Center*
- *Allen J. Zerkin, Ph.D., Adjunct Associate Professor*
  New York University
- *Herbert Levinson, Icon Mentor, UTRC*
- *Allison L. C. de Cerreño, Ph.D., Former Director, NYU Wagner Center*
- *Ben Miller, EPS, LL.*

This Study was prepared in response to the Governor's directive to conduct an extensive analysis of the feasibility of a truck/rail facility on Long Island. It was designed to answer three questions:

- Where should such a facility be located?
- Is an intermodal truck/rail transfer facility needed to respond to the current and anticipated volume of goods movement in Nassau and Suffolk County?
- What are the economic, social, and environmental effects of such a facility and can any adverse effects be mitigated?

Research for the study showed that there is a demand for increased freight delivery on Long Island as a result of population and employment gains. Moreover, the demands of the global economy and 21st Century technological and environmental imperatives are likely to require truck/rail freight delivery if the Long Island region is to remain economically competitive.

The Final Report can be accessed at http://www.utrc2.org/research/assets/189/LI-Report-Final1.pdf

University of Buffalo Awarded a Research Project for AERIS

The Intelligent Transportation System Joint Program Office (ITS JPO) announces the selection of seven projects to identify research opportunities which the U.S. Department of Transportation's (USDOT) AERIS (Applications for the Environment: Real-Time Information Synthesis) program could leverage. The seven projects were selected in response to Broad Agency Announcement DTFH61-10-F-00033.

Each of the seven projects will focus on specific research, as identified below, with the awarded work orders effective October 1, 2010.

University at Buffalo will conduct an evaluation of likely environmental benefits of lowest fuel consumption route guidance in the Buffalo-Niagara metropolitan area (a medium sized metropolitan area).
http://www.its.dot.gov/press/announcement/aeris_baa.htm

Recent Publications

UTRC Research Project Resulted to a Paper on "A GPS/GIS Method for Travel Mode Detection in New York City"

- *Hongmian Gong, Ph.D., Hunter College;*
- *Cynthia Chen, Ph.D., University of Washington;*
- *Evan Bialostozkya, Hunter College and;*
- *Catherine T. Lawson, Ph.D., University at Albany, SUNY*

Handheld GPS provides a new technology to trace people's daily travels and has been increasingly used for household travel surveys in major cities worldwide. However, methodologies have not been developed to successfully manage the enormous amount of data generated by GPS, especially in a complex urban environment such as New York City where urban canyon effects are significant and transportation networks are complicated. We develop a GIS algorithm that automatically processes the data from GPS-based travel surveys and detects five travel modes (walk, car, bus, subway, and commuter rail) from a multimodal transportation network in New York City. The mode detection results from the GIS algorithm are checked against the travel diaries from two small handheld GPS surveys. The combined success rate is a promising 82.6% (78.9% for one survey and 86.0% for another). Challenges we encountered in the mode detection process, ways we developed to meet these challenges, as well as possible future improvement to the GPS/GIS method are discussed in the paper, in order to provide a much-needed methodology to process GPS-based travel data for other cities.

The paper can be accessed at http://www.sciencedirect.com/science/article/pii/S0198971511000536

Dr. Zhan Guo, NYU Wagner Professor, Co– authored a Paper in the Journal of American Planning Association

NYU Wagner Professor Zhan Guo has co-authored a forthcoming Journal of American Planning Association (JAPA) paper, which argues that land-use planning and congestion pricing are mutually supportive in changing household vehicle miles traveled. Using a mileage fee program in Portland, OR, Guo and his co-authors found that with congestion pricing, the VMT reduction is greater in traditional (dense and mixed-use) neighborhoods than in suburban (single-use, low-density) ones, probably because of the availability of travel alternatives in the former. Under the same land use pattern, land use attributes explain more variance of household VMT when congestion pricing is implemented, suggesting that this form of mileage fee could make land use planning a more effective mechanism to reduce VMT.

The result suggests that for policymakers considering mileage pricing, land use planning affects not only the economic viability but also the political feasibility of a pricing scheme. For urban planners, congestion pricing provides both opportunities and challenges to crafting land use policies that will reduce VMT. For example, if a pricing zone overlaps with dense, mixed-use and transit-accessible development, it can reinforce the benefits of these development patterns and encourage greater behavioral changes.

The full citation of the paper is

"Guo, Z., Agrawal, A.W., and Dill, J. (2011) Are Land-use Planning and Congestion Pricing Mutually Supportive? Evidence from a Pilot Mileage Fee Program in Portland, OR."

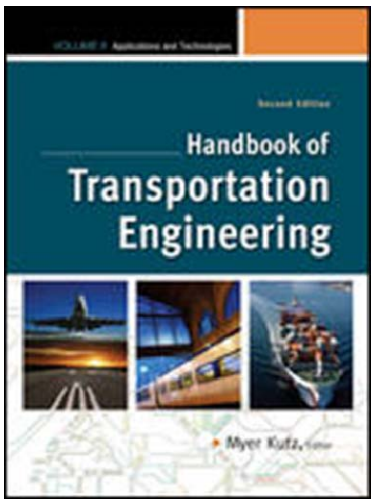
Lighting Center at RPI Presents Two Papers at the Society of Automotive Engineers World Congress

John Bullough, Senior Research Scientist and Adjunct Assistant professor at Rensselaer Polytechnic Institute's Lighting Research Center, presented two papers at the Society of Automotive Engineers 2011 World Congress in Detroit, MI in April.

The first paper, "Public perceptions of vehicle headlamps: Visibility and glare," details an assessment of public perceptions of vehicle headlamps in terms of their ability to support visibility and their impacts on headlamp glare, sponsored by the members of the LRC's Transportation Lighting Alliance (TLA). Bullough identified important misconceptions about headlamps that could be corrected through effective educational means, as well as areas to focus future research that could improve effective forward lighting systems and technologies. An abstract and information on obtaining the paper can be found at: http://papers.sae.org/2011-01-0110/

Bullough's second paper, "Luminance versus luminous intensity as a metric for discomfort glare," details luminance and luminous intensity as metrics for characterizing illumination and glare. In North America, luminous intensity is a standard metric for vehicle headlamp performance. While luminous intensity can account for illumination for forward visibility, it is an inappropriate metric for characterizing how much disability glare a headlight produces through veiling luminances under a wide range of viewing conditions. An abstract and information on obtaining the paper can be found at: http://papers.sae.org/2011-01-0111/

Lighting Research Center (LRC) Researcher Contributes a Chapter to New Transportation Handbook



John Bullough, Senior Research Scientist and Adjunct Assistant Professor at Rensselaer Polytechnic Institute's Lighting Research Center, contributed a chapter on roadway lighting in the second edition of the *Handbook of Transportation Engineering*, published this spring.

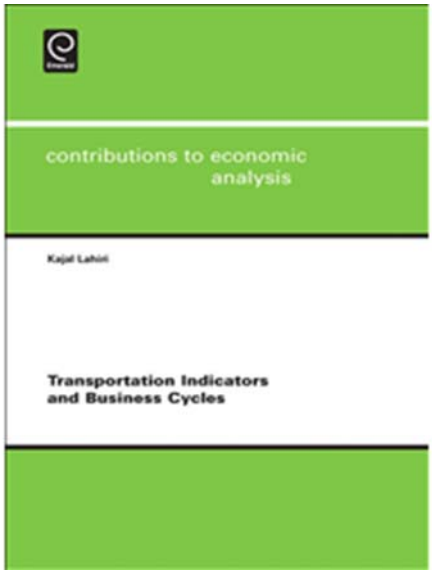
The handbook is a comprehensive two-volume reference covering the entire transportation engineering field, including freight, passenger, air, rail, road, marine, and pipeline transportation systems. It features contributions from nearly 70 experts in the field of transportation engineering and offers problem-solving engineering, planning, and design tools and techniques. Volume I addresses transportation networks and systems, operations, and economics, while Volume II focuses on applications in automobile and non-automobile transportation, safety issues, and environmental concerns .

Bullough leads the Transportation and Lighting Safety Program at the Lighting Research Center. The chapter he contributed, "Roadway Transportation Lighting," provides an introduction to measurement, characterization, and quantification of light; vision; and lighting technologies. It also discusses requirements for vehicle lighting and signaling systems, design and implementation of roadway lighting systems, and visual characteristics of traffic signals. The chapter includes brief discussion of emerging issues in transportation lighting that are beginning to affect lighting practice, including mesopic vision and light pollution.

The *Handbook of Transportation Engineering: Volume II* is available at: http://www.amazon.com/Handbook-Transportation-Engineering-II-Mcgraw-Hill/dp/007161477X/ref=sr_1_1?ie=UTF8&qid=1309191580&sr=8-1

To learn about Bullough's research, visit www.lrc.rpi.edu/programs/transportation/index.asp.

Kajal Lahiri's Book: Contribution to Economic Analysis; Transportation Indicators and Business Cycles



Synopsis

Transportation Indicators and Business Cycles" recognises the important role the transportation sector plays in business cycle propagation and develops indicators for this sector to identify its current state, and predict its future. The reference cycle is defined, including business and growth cycles, for this sector over the period from 1979 using both the conventional National Bureau of Economic Research (NBER) method and modern time series models. A one-to-one correspondence between cycles in the transportation sector and those in the aggregate economy is found. It also constructs an index of leading indicators for the transportation sector using rigorous statistical procedures, and performs well as a forecasting tool.

Transportation Indicators and Business Cycles,
Author Kajal Lahiri, University at Albany: SUNY.
Contributions to Economic Analysis Volume 289,
Emerald Group Publishing Ltd.,
Publication Date: 06 Sep 2010,
ISBN: 9780857241474, ISSN: 0573-8555,
Price: €82.95.

UTRC Project Leads to Four Publications by Dr. John Pucher

Ralph Buehler and John Pucher, "Cycling to Work in 90 Large American Cities: New Evidence on the Role of Bike Paths and Lanes," *Transportation*, Vol. 38, 2011, in press. (No link available yet)

John Pucher, Ralph Buehler, and Mark Seinen, "Bicycling Renaissance in North America? An Update and Re-Assessment of Cycling Trends and Policies," *Transportation Research A*, Vol. 45, No. 6, 2011, pp. 451-475.

- URL LINK: http://policy.rutgers.edu/faculty/pucher/TRA960_01April2011.pdf

John Pucher, Lewis Thorwaldson, Ralph Buehler, and Nick Klein, "Cycling in New York: Innovative Policies at the Urban Frontier," *World Transport Policy and Practice*, Vol. 16, summer 2010.
- URL LINK: http://policy.rutgers.edu/faculty/pucher/CyclingNY.pdf

John Pucher and Ralph Buehler, "Bike-Transit Integration in North America," *Journal of Public Transportation*, Vol. 12, No. 3, 2009, pp. 79-104.

Refereed Journal Articles by Dr. Pucher, Closely Related to His UTRC Project

Ralph Buehler, John Pucher, Dafna Merom, and Adrian Bauman"Active Travel in Germany and the USA: Contributions of Daily Walking and Cycling to Physical Activity," *American Journal of Preventive Medicine*, Vol. 40, No. 19, September 2011, in press. (No link available yet)

John Pucher, Ralph Buehler, Dafna Merom, and Adrian Bauman"Walking and Cycling in the United States, 2001-2009: Evidence from the National Household Travel Surveys,"*American Journal of Public Health*, Vol. 101, No. 10, October 2011, in press.
URL Link:
http://ajph.aphapublications.org/cgi/content/abstract/AJPH.2010.300067v1

John Pucher and Ralph Buehler, "Walking and Cycling for Healthy Cities," *Built Environment*, Vol 36, No. 5, December 2010, pp. 391-414.
URL Link:
http://policy.rutgers.edu/faculty/pucher/BuiltEnvironment_WalkBike_10Dec2010.pdf

John Pucher, Ralph Buehler, David Bassett, and Andy Dannenberg, "Walking and Cycling to Health: Recent Evidence from City, State, and International Comparisons," *American Journal of Public Health*, Vol. 100, No. 10, 2010, pp. 1986-1992.
URL LINK: http://ajph.aphapublications.org/cgi/content/abstract/AJPH.2009.189324v1

Dr. Rick Geddes Talks about High Speed Rail and Transportation Infrastructure in the Following Articles

Will high-speed rail happen in California?
Southern California Public Radio - May 24
Rick Geddes, Associate Professor of Policy Analysis and Management, joins a debate on the feasibility of high-speed trains in California.

Will $795 million help turn around Amtrak's high-speed rail?
TechNewsDaily - May 17
Rick Geddes, Associate Professor of Policy Analysis and Management, says that high-speed rail lines ought to be concentrated in heavily populated areas.

Where the money is
The Wall Street Journal - May 22
In an opinion piece, Rick Geddes, Associate Professor of Policy Analysis and Management, argues for public-private partnerships to rebuild America's transportation system

Dr. David Livingston's Program "the Pedestrian Injury Prevention Partnership"

Newark Health Specialists' Program Works to Reduce Accidents Involving Children
Dr. David Livingston, head of the trauma unit at UMDNJ, center, has a program designed to help school children get to school without car accidents..

During RITA Visit, Graduate Students from UTRC Consortium Universities shared their research work along with their faculty advisors - Photo by Rodolfo

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

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