

UTRC

University Transportation
Research Center
Region 2
2010 Annual Report



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The preparation for this report was funded by a grant from the Research and Innovative Technology Administration of the U.S. Department of Transportation. This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

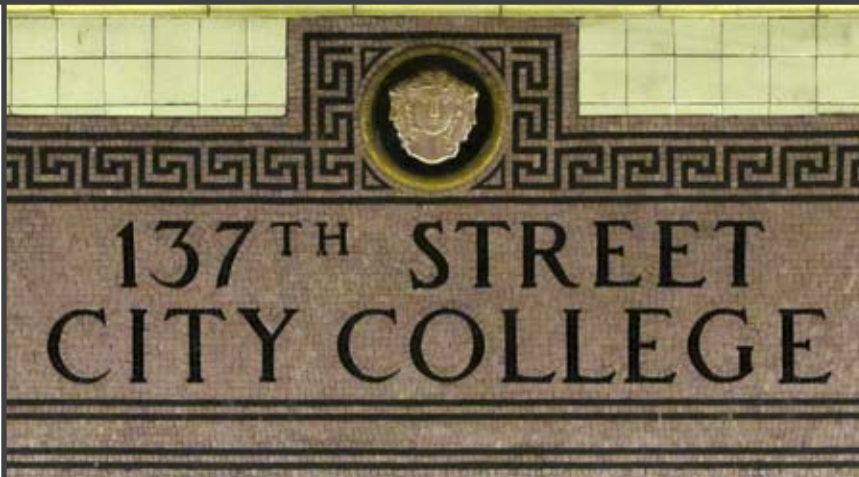
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Annual Report – 2010

This Report represents the activities of the UTRC from
October 1, 2009 - October 31, 2010

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DIRECTOR'S MESSAGE

Camille Kamga, Acting Director



I am proud to present UTRC's Annual Report for 2010. It presents the Center's program and highlights activities conducted during fiscal year 2010.

Reflecting on this year's activities, it gives me great pleasure to say that we have been very active with the three programs that constitute the core of the National University Transportation Center's program— Education, Research and Technology Transfer.

As you read through this report, you will see that our funding allocation to programs grew to surpass \$7.5 million in FY2010. This year, we hosted and co-hosted more than 30 events including seminars, workshops, symposiums, summits, and conferences, and the recipients of the 2009-2010 September 11 Memorial Program Academic Initiative scholarships gave final presentations on their projects at a ceremony held at the New York Metropolitan Transportation Council and attended by local transportation professionals. With funding from our local

transportation agency-partners, we initiated 25 new research projects, continued investigation on 19 research projects, and successfully completed and disseminated final reports for more than 8 research projects.

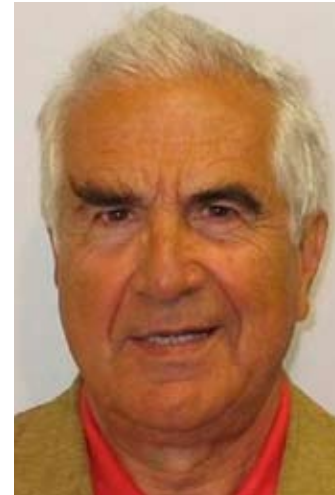
Our successful year is due largely to the extraordinary creativity, commitment and hard work demonstrated by the Center's exceptional staff, affiliate faculty, and principal investigators, from our staff who are developing and administering our day-to-day programs to our students and principal investigators who competed fiercely and successfully for scholarships and grants.

We look ahead with excitement and optimism. Next year, the Center will be growing stronger with additions to our membership. Four Universities – Clarkson University, Hofstra University, Syracuse University, and The College of New Jersey, are joining our consortium starting January 2011. With our institution members, we are increasing our resources and greatly expanding our education and research capabilities.

The excellence of the Center's work and the importance of our mission remain constant. This legacy, of which we should all be proud, will be carried forward as we continue to leverage the academic programs and research capabilities of the universities to educate transportation professionals, conduct basic and applied research on transportation problems, and transfer research results to end users.

CHAIRMAN'S MESSAGE

John Falcocchio



This Annual Report documents the many significant activities undertaken in the three mission areas of our Center's theme "Planning and Managing Regional Transportation Systems in a Changing World."

Our Consortium faculty performed multimodal research projects funded by the

Departments of Transportation of New York and New Jersey; enhanced our traditional educational mission through an impressive program of "Visiting Scholars;" and the technology transfer program organized workshops and seminars to propagate information relevant to policy making and transportation management.

The Center's goal of adding value to the planning and management products of our agency partners was strengthened with the addition to our Consortium of four new members, Clarkson University, The College of New Jersey, Hofstra University and Syracuse University, thus expanding the Center's capacity in innovation and problem solving.

I believe this year's annual report attests to the Center's continued commitment in meeting our regional and national transportation challenges with an impressively productive year. I hope you will agree.

2010 HIGHLIGHTS

Robert Paaswell Appointed Interim President of the City College of New York

Appointed by the Board of Trustees of The City University of New York, UTRC's Director Emeritus, Robert E. Paaswell served as Interim President of The City College of New York from 2009-2010. As Interim President, Dr. Paaswell was the chief executive of the flagship institution of CUNY, a comprehensive teaching, research, and service institution with 16,000 students, professional schools in architecture, biomedical education, education and engineering, a College of Liberal Arts and

Science and an annual budget of over \$230 million. During his tenure, Dr. Paaswell raised the intellectual profile of the College, energized its faculty, focused the administration on to its core mission of serving students and faculty, and engaged the Upper Manhattan community. He raised \$29.4 million in gifts in his affiliated role as President of the City College 21st Century Foundation, and was able to prepare the college for a transition to new leadership.



Zhan Guo Wins Best Paper Award



Dr. Zhan Guo, Assistant Professor of Urban Planning and Transportation Policy and Director of Research at the Rudin Center, has won the award for Best Transportation Paper presented by the University Transportation Research Center, Region 2. Professor Guo was honored at a reception hosted by NYU's Rudin Center for Transportation Policy & Management at the Robert F. Wagner Graduate

School of Public Service. Professor Guo's paper, "Does the Built Environment Affect the Utility of Walking? A Case of Path Choice in Downtown Boston," was published in *Transportation Research D: Transport and Environment*, Vol. 14 in 2009. For more information about the award and to access Prof. Guo's paper, please visit the UTRC website: <http://www.utrc2.org/research/bestpaper.php>.

UTRC Presents Intermodal Study

On August 17, 2010 Robert Paaswell, Principal Investigator, presented the findings of a study sponsored by NYSDOT at the headquarters of the Long Island Association in Melville, NY. “Potential Long Island Intermodal Sites” conducted on the direct request of NY’s Governor addressed the following three main questions. Is an intermodal truck/rail facility needed to respond to current

and anticipated volume of goods movement in Nassau and Suffolk County? Where should such a transfer facility be located? And what are the economic, social, and environmental effects of such a facility and can any adverse effects be mitigated? Other team members included, Herbert Levinson, Benjamin Miller, Penny Eickemeyer, Project Coordinator, Harry Schwartz and Allen Zerkin.

UTRC Student of the Year – Michael Silas

Michael Silas has been awarded UTRC student of the year during January’s 2010 CUTC meeting. Michael Silas earned his Ph.D. in the summer of 2009 at Rensselaer Polytechnic Institute, in the Department of Civil and Environmental Engineering. Michael’s dissertation was titled “An Investigation on Off-Hour Delivery Policy Design using Optimal Incentives and a Behavioral Micro-Simulation Approach”. He has extensive research experience in operations research, applied mathematics, statistics, economics, and freight transportation - all centered on policy analysis. Mr. Silas also

worked on time-of-day tolls and off-hour delivery research projects funded by the NJ DOT, the PA-NYNY, NYSDOT, and the USDOT. From his research efforts, Michael co-authored the UTRC’s Region 2’s Best Transportation Paper in 2007, was honored with the New York Metropolitan Transportation Council’s (NYMTC) fellowship (2006-2007), and was awarded the Dwight David Eisenhower Federal Highways Association Transportation fellowship (2005-2006). Beyond his research, Mr. Silas holds B.A. and M.S. degrees from the University of Dayton in Mathematics and Management Science.



Claire McKnight Appointed Chair of Civil Engineering

Claire McKnight, CCNY Associate Professor of Civil Engineering, has recently been appointed Chair of the Department. Professor McKnight has a long standing history with UTRC and is also UTRC's Assistant Director for Education and Training. As such, Professor McKnight administers the Center's Advanced Institute for Transportation Education program which includes its annual scholarship awards. Dr. McKnight has been involved in transportation research since 1976 and has been the principal investigator of numerous

projects meeting the needs of such regional transportation agencies as NYC DOT, NYMTC and NJDOT. Her research interests focus on operations and management of urban transit systems, transportation and safety issues of special groups, and transportation planning and policy. Studies have dealt with topics such as traffic calming, driver licensing, pedestrian safety and the impact of congestion on bus operations which led to a NYC Transit internal study of traffic signal impacts on bus travel times.



Camille Kamga Serves as Acting Director of UTRC



Camille Kamga is currently serving as Acting Director of the University Transportation Research Center. In his expanded role at UTRC, he works closely with federal, regional and state transportation planning and policy organizations. He has more than twelve years of experience working on transportation related projects at UTRC and is an Assistant Professor of Civil

Engineering at CCNY. He has been involved in research projects for the New Jersey Department of Transportation, the New York State Department of Transportation, the New York City Department of Transportation, and Transit agencies. His research interests include Intelligent Transportation Systems, Traffic Incident Management and Transportation Operations, Management and Organizations.

CENTER'S THEME

“Planning and Managing Regional Transportation Systems in a Changing World”

Region 2's primary focus is the Stewardship, management, and future evolution of its already mature transportation systems, in the face of emerging policy challenges. The region's transportation agencies must continually adjust to the nature of the economy and its evolving transportation requirements; their emerging understanding of what is required to protect public safety and security; and new challenges, such as global climate change. As advances in technology continually redraw the boundaries of what is possible, transportation agencies also face the daunting challenge of revisiting how they define their missions, serve the public and conduct their routine business. Because this region has historically faced so many transportation challenges, it has a tradition of innovation in transportation. Yet as the early solutions it adopts become institutionalized, it tends to be slow to absorb and implement lessons from innovators elsewhere in the U.S. and abroad, and thus often falls behind the curve. To become a region that can plan and manage its systems effectively in the face of change, it must become more dynamic in its approaches to the management of information and technology.

UTRC's theme – “Planning and Managing Regional Transportation Systems in a Changing World” encompasses three broad thematic areas:

Planning Today: requires knowledge of multi-modal and intermodal systems serving both freight and passenger movements. Planning in the region involves not only MPOs, but

all of the many agencies taxed with the need to move people and goods 24/7. Planning is constrained by institutional mandate and history, the need to catch up with a backlog of capital needs, and a chronic shortage of adequate funds for both maintaining and building the infrastructure. UTRC's role is to provide through academic programs, a solid base on which planning decisions can be made.

Management Today: demands knowledge of interaction among complex multi modal systems, budgeting, system operations and performance targets, customer needs, the need to address security, and – when fighting fires stops – a sense of vision of system performance and regional change. Management takes place at every level: from agency board members to line operators. UTRC works to develop education and training programs to improve the state of knowledge and practice at all of these levels.

Responses to Change: As the world changes, the demands on the transportation system change as well. Tomorrow's transportation systems will need to be more secure, more resilient to natural hazards, less damaging to the environment, and better able to use available capacity efficiently. Emerging transportation systems rely on real time technology and rapid transfer of operational information. The institutions that have traditionally operated the regional assets must, themselves, begin to change. They must think multimodally, with integrated operating systems. UTRC strives to assist these agencies to achieve organizational change responsive to new missions.

STAFF

Dr. Camille Kamga

Acting Director,
Assistant Professor
of Civil Engineering



Dr. Robert E. Paaswell

Distinguished
Professor of Civil
Engineering,
Director Emeritus



Dr. Claire McKnight

Assistant Director of
Education and Chair
of Civil Engineering



Nadia Aslam

Research Associate



Penny Eickemeyer

Assistant Director
for Program
Management



Herbert Levinson

UTRC Icon Mentor
and Professor
Emeritus of
Transportation



Matthew W. Daus, Esq

Distinguished
Lecturer



Danielle L. Petretta

Assistant
Director for
Technology Trans-
ferew



Abhishek Singhal

Ph.D. Candidate



Kelly O. Asiamah

Student Intern



Andrew Nagel

Intern, Information
Technology



Dr. Ellen Thorson

Senior Research
Fellow



Dr. Anil Yazıcı

Research
Associate



Benjamin Miller

Senior Research
Associate, Freight
Programs



Rodolfo Leyton

Designer



MANAGEMENT STRUCTURE

UTRC has adopted a corporate style of management. In this style, the UTRC Board provides policy guidelines, and approval of UTRC activities. Dr. Camille Kamga, Assistant Professor of Civil Engineering at The City College of New York, serves as Acting Director, overseeing day-to-day operations and providing a bridge between UTRC policies and the activities and resources used to carry out those policies.

The Board of Directors, with representatives from consortium universities, is chaired by Dr. John Falocchio of Polytechnic University and conducts its business through a well-organized committee structure. The full Board reviews Center objectives and programs, approves budgets, and reviews and recommends actions forwarded by its two major working committees.

The two committees, Research and Technology Transfer, chaired by Dr. Ali Maher of Rutgers University, and Education and Training, chaired by Dr. Neville Parker of City College are the working hearts of the Board. Each is responsible for developing the yearly program of activities, overseeing the selection of projects, and recommending to the full Board the programs of projects commensurate with the budget.

BOARD OF DIRECTORS

Hongmian Gong, Ph.D.
City University of New York, New York

Claire McKnight, Ph.D.
City University of New York, New York

Neville A. Parker, Ph.D.
City University of New York, New York

Raimondo Betti, Ph.D.
Columbia University, New York

Elliott Sclar, Ph.D.
Columbia University, Earth Center,
New York

Mark A. Turnquist, Ph.D.
Cornell University, New York

Huaizhu (Oliver) Gao, Ph.D.
Cornell University, New York

Pricilla P. Nelson, Ph.D.
New Jersey Institute of Technology,
New Jersey

Lazar Spasovic, Ph.D.
New Jersey Institute of Technology,
New Jersey

Mitchell L. Moss, Ph.D.
New York University, New York

Rae Zimmerman, Ph.D.
New York University, New York

John C. Falocchio, Ph.D.
Polytechnic Institute of NYU, New York

Richard Wener, Ph.D.
Polytechnic Institute of NYU, New York

José Holguin-Veras, Ph.D.
Rensselaer Polytechnic Institute, New York

William "Al" Wallace, Ph.D.
Rensselaer Polytechnic Institute, New York

Ralph Dusseau, Ph.D.
Rowan University, New Jersey

Yusuf Mehta, Ph.D.
Rowan University, New Jersey

Robert Noland, Ph.D.
Rutgers University, New Jersey

Ali Maher, Ph.D.
Rutgers University, New Jersey

Michael M. Fancher
State University of New York, Nanotech, Albany,
New York

Catherine T. Lawson, Ph.D.
State University of New York, Albany,
New York

Adel W. Sadek, Ph.D.
State University of New York, Buffalo,
New York

Shmuel Yahalom, Ph.D.
State University of New York, Maritime College,
New York

Hank Dobbelaar, Ph.D.
Stevens Institute of Technology,
New Jersey

Sophia Hassiotis, Ph.D.
Stevens Institute of Technology,
New Jersey

Ismael Pagán-Trinidad, Ph.D.
University of Puerto Rico, Mayagüez, Puerto
Rico

Didier M. Valdés-Díaz, Ph.D.
University of Puerto Rico, Mayagüez, Puerto
Rico

FINANCIAL REPORT

The following charts summarize the UTRC revenues and expenditures for FY 2009-2010. Under the transportation bill – SAFETEA-LU, the University Transportation Research Center Region 2 funding allocated to programs totaled approximately \$7.6 Million in 2009-2010. This fiscal year, the annual USDOT grant allocated to our programs was \$1,388,834. The USDOT funds represent 18 percent of the total allocation.

During the FY 2009-2010, UTRC has continued to strengthen its relation with its partners. As in the past, UTRC’s longtime partners, the New York State Department of Transportation, the New York Metropolitan Transportation Council, and the New Jersey Department of Transportation provided a combined 56 percent of the funding. UTRC’s in-kind support from university members and agencies were 26 percent of the total budget.

Continued with its tradition, and strong partnerships, and solid financial commitment from federal, state, and local transportation agencies, UTRC allocated 79 percent of its total budget to research projects. To carry out administrative and technology transfer programs, 15 percent of these funds were used. The remaining funds (6%) were allocated to the Advanced Institute for Transportation Education program, the September 11th Memorial Program for RTP – Academic Initiative, and other educational initiatives.



REVENUES		
■	Federal	18%
■	Agencies	58%
■	In-Kind	24%



ALLOCATIONS		
■	Administration and Technology Transfer	15%
■	Research Projects	71%
■	Education	6%

MEMBER UNIVERSITIES

City University of New York

The City University of New York is the nation's largest urban university. CUNY, with more than 100 nationally recognized research centers, institutes and consortia, is also one of the nation's major research institutions. Due to its urban context, many of CUNY's campuses are involved in transportation research and education. CCNY is UTRC's host campus. Faculties within several departments are actively involved in transportation research and the activities of UTRC. CCNY is also home to the CUNY Institute for Transportation Systems and the CUNY Institute for Urban Systems.

Stevens Institute of Technology

Founded in 1870 in Hoboken, New Jersey, the Stevens Institute of Technology is one of the leading technological universities in the country. Research at Stevens Institute includes structural dynamics, soil-structure interaction, freight transportation, and embedded, real-time, intelligent infrastructure systems.



University of Puerto Rico

The University of Puerto Rico was established in 1903. Transportation research at UPR is concentrated on its Mayagüez campus, which serves over 12,000 students.



Its Department of Civil Engineering has an active program in natural hazards research with applications in transportation. UPR is home to the Civil Infrastructure Research Center, which was funded by FEMA, FHWA, the Puerto Rico Department of Transportation, and other partners, and the Puerto Rico Transportation Technology Transfer Center, the local center for FHWA's Local Technical Assistance Program.

Columbia University

Columbia University was founded in 1754 and is the oldest institution of higher learning in the state of New York, with enrollments of over 23,000 students in 16 schools and colleges. Columbia conducts transportation-related research through its strong departments of Urban Planning, Civil Engineering, and Industrial Engineering and Operations Research. Columbia is also home to the Earth Institute, which houses The Center for Sustainable Urban Development.



Cornell University

Founded in 1868 and being first university in the eastern United States to admit women, Cornell University today encompasses thirteen undergraduate, graduate, and professional colleges and schools. Cornell is a unique combination of public and private divisions, being both a private, nonsectarian university and the land-grant institution of New York State. Cornell is home to the Transportation Infrastructure Research Center and the Cornell Local Roads Program, New York State's Local Technical Assistance Program center.



State University of New York

The State University of New York's 64 geographically dispersed campuses comprise the nation's more comprehensive system of public higher education. Across this network, SUNY has many capabilities that relate directly and indirectly to transportation research: urban planning and nanotech at Albany; civil and earthquake engineering, urban planning, and transportation injury research at Buffalo; environmental mitigation and biofuels at Syracuse; port security and trade at Maritime College; thermal sprays at Stony Brook; and pavements at Farmingdale. Many individual faculty members at other SUNY campuses are involved in transportation research as well.



Polytechnic Institute of NYU

Polytechnic Institute of NYU, the nation's second oldest private engineering university, was founded in 1854 in Brooklyn, New York. Today, it is the New York metropolitan area's preeminent resource in science and technology

education and research. In the transportation field, Polytechnic has strengths in Traffic Models, Highway Capacity and Traffic Operations, and Intelligent Transportation Systems. It is home to the Urban ITS Center, funded by the New York City Department of Transportation.



Rutgers University

Rutgers University is one of America's leading public research universities and educates over 48,000 students on its three campuses. Rutgers' Department of Civil and Environmental Engineering, Department of Industrial and Systems Engineering and Edward J. Bloustein School of Planning and Public Policy are all active in transportation research. It is home to the Center for Advanced Infrastructure and Transportation, which serves as New Jersey's center for FHWA's Local Technical Assistance Program, the Voorhees Transportation Center and the National Transit Institute.



Rowan University

Established in 1923, Rowan is a comprehensive public university serving nearly 10,000 students in a Graduate School and several Colleges. Rowan's Civil and Environmental Engineering Department conducts transportation research in the areas of pavement design, materials, rail crossing safety, structural design of bridges, and structural design and testing of transit vehicles. Other areas of transportation research include renewable energy technologies, diesel combustion, distributed instrumentation systems and smart sensors, and vehicle systems integration.



New Jersey Institute of Technology

NJIT is a public research university enrolling nearly 8,100 students in 92 degree programs. NJIT has built its research program around multi-disciplinary centers that encourage partnerships among various disciplines, educational institutions, private enterprise and government agencies. NJIT is home to the

National Center for Transportation and Industrial Productivity, the International Intermodal Transportation Center, and the New Jersey TIDE (Transportation Information and Decision Engineering) Center.



New York University

Founded in 1831, New York University is one of the largest private universities in the United States, with nearly 51,000 students. NYU is home to the Robert F. Wagner Graduate School of Public Service, which engages transportation issues through programs in Urban Planning, Public Management and Finance, and Negotiation and Conflict Resolution. NYU also is host to the Rudin Center for Transportation Policy and Management and the Institute for Civil Infrastructure Systems.



Rensselaer Polytechnic Institute

RPI was established in 1824 and has the oldest program in Civil Engineering in the English-speaking world. RPI provides vast leadership in research relating to intelligent transportation systems, transportation modeling, traffic operations, intermodal freight transportation, transportation economics, and analytical approaches to emergency management. RPI hosts the Center for Infrastructure and Transportation Studies, The Intermodal Center for Freight Security and the Lighting Research Center, which has a dedicated Transportation Lighting Group.



EDUCATION & TRAINING



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



September 11th Memorial Program Completes 5th Year

The idea for the Academic Initiative of the September 11th Memorial Program was conceived as a living memorial to the three NYMTC employees who perished on Sept. 11— Ignatius Adanga, Charles Lesperance, and See Wong Shum. Staff, NYMTC members and family members joined together to develop a memorial that would live in their memories. In 2005, an overseeing body was formed consisting of four subcommittees: Academic, Planning, Finance and Public Awareness. The group then convened to choose student applicants for the 2005-06 academic initiative. Since that time, the rigorous application process has become

increasingly more competitive over the years with 65 applications over the course of the five year program. Of these, 22 were accepted. Students receive stipends funded by NYMTC and UTRC, tuition reimbursement at UTRC consortium members and/or placement in a public agency internship. Over the course of the program, several internships have been completed at such NYMTC member agencies as NYC DOT, MTA Capital Construction, the Port Authority of NY & NJ, and Westchester County Departments of Transportation and Planning. Recipients of the program's 5th year presented their work in September 2010 to the

NYMTC audience. Students and their research presentations are listed below.

Haiyun Lin, Ph.D. candidate CCNY presented the results of her work on “Improving the Residential Location Model for the New York Metropolitan Region.”

Sandra Rothbard, NYU Wagner, reported on her internship at the PANY&NJ and her study “Promoting Community Involvement in Freight Decision-Making: A Resource Guide for the Port Region of New York and New Jersey.”

Judd Schechtman, Ph.D. candidate, Bloustein School at Rutgers presented his research, “Is Sprawl Still the Law? Linking Land Use Law and Transportation Planning for Building the Green Metropolis.”

Alex Wolk, NYU Wagner, an intern at NYC-DOT presented his work on a “Bus Management Plan for Lower Manhattan”.

For more information on the September 11th Program or for details of the students' work, please follow <http://www.utrc2.org/education/911memorial.php> .



New On-Line Graduate Certificate Program

In consultation with the National Academy of Sciences' Transportation Research Board, the public and private sectors and other transportation related associations, the nation's regional University Transportation Centers, have developed a distance learning based Graduate Education Certificate program designed to educate transportation leaders for the 21st Century. The Program will provide knowledge and a comprehensive understanding of the issues required to deal with multi-modal transportation challenges in a growing complex world. The Program hopes to expand the pool of new professionals with essential competencies and to nurture individuals with potential leadership qualities in both the public and private sectors. Courses will center around the theme of "Transportation Policy, Management and Operations". Successful participants will be awarded a prestigious certificate endorsed by USDOT and leading transportation organizations and their coursework can also be transferred towards graduate degrees requirements

Elisabeth Wooton was awarded the Women's Transportation Seminar Helen M. Overly Memorial Scholarship which is co-sponsored by UTRC. Dr. Alison Conway, Assistant Professor of Civil Engineering at CCNY, presented Ms. Wooton with her award during the WTS Greater New York Chapter's Annual Gala. Ms. Wooton is working towards her Master of

UTRC WTS Award Winner

Urban Planning at the NYU Wagner School of Public Service and has worked as a City Planner for the MTA NYCT Department of Subways and most recently has taken a position in the NYCT's Office of the President. She is most interested in the built urban environment, including infrastructure, transportation systems, and open space design.



UTRC Awards AITE Scholarships

The Advanced Institute for Transportation Education sponsors the AITE Graduate Scholarship to attract bright people to careers in transportation and to encourage practicing professionals to stay current in the field and increase their expertise in transportation. This past year, nine new scholars were accepted into the program out of 19 competitive applications. Among those awarded were employees of NYSDOT and NYCT and students at Rutgers, SUNY Albany, Polytechnic Institute of NYU and SUNY Albany and SUNY Maritime. Financial support up to a value of \$25,000 dollars is available for outstanding full-time Masters students in transportation programs at one of six consortium participating universities. The scholarship provides tuition from the university matched by UTRC for full time students. Tuition up to a value of \$12,500 is also provided for practicing professionals and, in addition, the employed AITE scholar is awarded 10 hours per week paid work release time at the participating transportation agency. For more information on the program follow <http://www.utrc2.org/education/aite.php>.



New York Metropolitan Transportation Council – Executive Development Program

Designed for mid-level transportation agency personnel identified as having high career potential, the Executive Development Program focuses on transportation management, policy, operations, and planning. The program is administered through UTRC and conducted by NYU's Rudin Center for Transportation Policy and Management. In addition to providing students with a year-long curriculum, this highly successful program fosters informal inter-agency relationships among participants, thus promoting greater inter-agency cooperation and exchange of best practices within the field.

NJDOT STUDENT OF THE YEAR

Drew Terpenning, a graduate student in the Department of Civil and Environmental Engineering at the New Jersey Institute of Technology was awarded this year's NJDOT Outstanding Student in Transportation Award. Drew was selected from a pool of potential candidates enrolled at UTRC Consortium schools. Camille

Crichton-Summers, Manager, of the Bureau of Research at the New Jersey Department of Transportation presented Drew with his award at NJDOT's 12th Annual Research Showcase. Outstanding Students nominated from other NJDOT research partners were also presented with awards.



Photo by Steve Goodman



TECHNOLOGY TRANSFER

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

High Speed Rail: The Fast Track to Sustainability Presented by Rod Diridon

VISITING SCHOLAR SEMINARS



On October 1st, Rod Diridon presented “High Speed Rail: The Fast Track to Sustainability” to the UTRC audience. Dr. Diridon is the executive director of the Minnesota Transportation Institute and is a national and international expert in the field. His seminar examined and demonstrated how high speed rail can be utilized to meet

sustainability goals. Advances of premiere international high speed rail systems were presented along with the progress of California’s high speed rail efforts and accomplishments. Finally, challenges and barriers of high speed rail projects in the US and the NY regional were discussed and debated.

Efficient and Sustainable Urban Freight and Logistics Strategies: Can We Achieve and Afford a Low Carbon Urban Freight System? Presented by Dr. Michael Browne

Dr. Michael Browne, Professor of Logistics at University of Westminster, offered his expertise and experiences with freight logistics on June 2nd at the SUNY Global Center at 116 East 55th Street between Park and Lexington. Professor Browne discussed recent developments in European urban freight focusing on policy and business initiatives. This included a review of urban low emissions zones across Europe, urban freight consolidation centres, clean vehicles and moving from trials to implementation, public-private partnerships

in urban freight and city and local authority planning initiatives that impact freight. Michael Browne specialises in urban logistics, logistics and energy issues and international developments logistics. He teaches freight transport and logistics plus retail supply chain management. He has worked on studies for the EPSRC, the European Commission, the UK Departments of Transport and Trade, and other commercial organisations. He is also Assistant Editor of the Journal Transport Reviews, and has been widely published



Meeting the Nation's Transportation Challenge: How to Finance the Transportation Program Presented by C. Michael Walton

This seminar was delivered by Visiting Scholar C. Michael Walton, Professor, Cockrell School of Engineering, University of Texas at Austin, on May 21st. Dr. Walton's seminar focused on the fact that the US is facing a national transportation dilemma in system performance and funding which will lead to dramatic changes in government policy. The next national transportation authorization is considered the most critical since 1956, the year the interstate highway system and the trust fund were founded.

This bill will chart the path for transportation in the 21st century. Dr. Walton addressed such issues as What are the options that may be the pillars for the authorization? Is there a new transportation vision for the nation? Where are we going and how do we get there? Dr. Walton's research focuses on intelligent transportation systems and intermodal freight logistics in addition to transportation systems engineering, planning, operations and policy analysis.



Dr. Yael Parag Visits From Oxford



On November 13, 2009, Dr. Yael Parag presented her research on “Personal Carbon Trading: Implications On Individual Travel Demand.” Her research represents forward thinking on adapting and mitigating to worldwide climate change. She offered her perspective on current advances and debates of the issue in the UK including Personal Carbon Trading (PCT) a policy being debated and aimed at reducing emissions from the domestic sector which, if implemented, would have implications for personal mobility. Dr. Parag further discussed its implications

on energy consumption, people’s travel behaviour and private transport and mobility in particular. Dr. Yael Parag is a senior researcher in the energy group at Oxford University’s Environmental Change Institute (ECI). She is an environmental public policy scholar and writer, recently publishing a co-authored book chapter on Personal Carbon Budgets - Helping Individuals to Live in a Carbon Constrained World, which was published by the American Council for an Energy-Efficient Economy, ACEEE.

Transport, Land Use and Value Presented by David Levinson

On April 30th, Dr. David Levinson presented to the UTRC audience. Dr Levinson proposed that given the fact that transportation creates land value, and recognizing the problem of underfunding transport infrastructure, new funding sources can be used to increase transport investment, create additional land value, and improve social welfare. Dr. Levinson’s presentation considered the co-evolutionary process between the development of land and transport networks. Using data from the rail and Underground in London and the streetcar system in

the Twin Cities, the empirical relationship was established statistically under several different contexts, and hypotheses about the positive feedback nature of the interaction were tested.

Dr. David Levinson is an Associate Professor in the Department of Civil Engineering at the University of Minnesota and Director of the Networks, Economics, and Urban Systems (NEXUS) research group. He currently holds the Richard P. Braun/CTS Chair in Transportation.



UTRC Symposium Attracts Who's Who In Transit

On May 7th, UTRC presented the symposium “Sustainable Transit: Developing an Action Agenda” to nearly 200 participants. International and national experts, operators, practitioners, planners, decision makers, public officials and academics came together to work towards the common goal of achieving regional sustainability. And, more specifically, how transit - already the foundation of integrated plans can further support goals. Participants traveled to the City College campus to generate discussions, exchange and debate ideas and attempt to answer some of the most difficult questions facing the region. For much more information and to view portions of or the entire webcast please follow this link, <http://www.utrc2.org/events/events.php?viewid=264>. Additional photos on pg 51.



Photos by Bill Summers and Rodolfo Leyton

UTRC Hosts First US Meeting of the Taxi Research Network

On September 23rd, UTRC hosted visiting researchers and international taxi experts, Dr. James Cooper, Edinburgh Napier University and Wim Faber, Editor-in-chief at Magazine Personenvervoer. UTRC Distinguished Lecturer and former NYCTLC Commissioner, Matthew Daus, moderated the afternoon panel discussion and subsequent debate. The event was also co-sponsored by the International Association of Transportation Regulators (IATR). UTRC was pleased to facilitate this first US meeting of the Taxi Research Network. UTRC, through its notable consortium of researchers, was able to provide an objective forum for building networks, fostering multi-disciplined synergies and creating awareness of this indispensable yet often overlooked mode of travel. One of the goals of this event and of this Network is to build upon a growing group of

academics and professionals interested in conducting collaborative research addressing issues of and barriers to incorporating the taxicab into mainstream transportation planning and research. UTRC, and Acting Director Camille Kamga and Matt Daus in particular have been working to strengthen ties with this industry. They have presented the UTRC program at the 23rd Annual Meeting of the IATR in Chicago and also at the World Conference on Transport Research in Lisbon, Portugal, both occurring earlier this summer.

For more information and to view the archived webcast sponsored by IATR, follow <http://www.utrc2.org/events/events.php?viewid=276>. For information on the Taxi Research Network, follow http://www.taxiresearch.net/www.taxiresearch.net/Taxi_Research_Network.html.



David Strickland, NHTSA Administrator presents Matt Daus with an award at the IATR Annual Meeting.
Photos by Wim Faber



Matt Daus introduces Dr. James Cooper

AIRPORTS: 21st Century Makeovers for the New York Metro Region

UTRC was proud to co-sponsor “AIRPORTS: 21st Century Makeovers for the New York Metro Region” held last June with the Steven L Newman Real Estate Institute, the CUNY Aviation Institute and the Port Authority of New York and New Jersey. The interdependence of the health of our airports and the health of our economy was underscored throughout the day by conference speakers including top officials from the FAA, the PANY&NJ, aviation executives and other experts. The need to proactively manage dramatic growth, minimize risk, boost ef-

iciency, reduce environmental impacts while upgrading to Next-Gen is an absolute necessity. Susan Baer, Director of Aviation at the Port Authority wrapped up the day by suggesting several action items to build support such as joining the National Alliance to Advance NextGen and the Better Airports Alliance and to forward improvement suggestions to myidea@panynj.gov. Watch for another meaningful conference on this topic in 2011.

<http://www.panynj.gov/airports/nextgen-sign-up.cfm>

<http://www.betterairportsnyj.com/>.



UTRC Co-Sponsors LAESA First Lego Qualifier at CCNY

In January, UTRC was one of the co-sponsors which supported the Latin American Engineering Student Association at City College (LAESA) as they organized and offered “Transforming Transportation: First Lego League Manhattan Qualifier”. About 32 Teams and hundreds of middle school students ages 9-14 participated in the competition which was presented by LAESA, a chapter of the Society of Hispanic Professional Engineers and one of the largest and most well-known undergraduate student associations at CCNY. Winners went on to compete in the city-

wide championship at the Jacob Javits Center. This year’s challenge was “Smart Move” where students were asked to identify a transportation problem and develop an innovative solution. Students also had to design a robot that would complete numerous transportation related tasks in an obstacle course. Students were judged on technical design, research, performance and teamwork. The competition was established to attract students to science and technology. This was the second year the competition was held at CCNY.



Rowan Presents High RAP Workshop

Under the direction of Dr. Yusuf Mehta, Professor of Civil and Environmental Engineering, a Rowan University research team conducted the High RAP Technology Transfer Workshop on March 18th 2010 at the South Jersey Technology Park at Rowan. The program was funded in part under UTRC's Education and Technology Transfer grant program. The workshop was attended by 40 representatives from Delaware DOT, New Jersey DOT, New Jersey Turnpike Authority, New Jersey Asphalt Paving Association, Federal Aviation Administration, Federal Highway Administration, consultants, and contractors in the region. The workshop was a great success in that the research results were disseminated to all stakeholders,

rather than only select research customers. The Rowan team received much positive feedback as well as requests to hold more workshops in the future.



NJDOT Research Showcase

The NJDOT Bureau of Research held its 12th Annual Research Showcase on October 21, 2010. The Showcase offers an opportunity for NJDOT customers to experience the broad scope of ongoing research initiatives, technology transfer activities, and academic research being conducted by university research partners and their associates. Research was

highlighted in presentations, poster sessions and displays. The program was sponsored by the NJDOT Research Bureau with assistance from Rutgers' CAIT-NJ LTAP. For additional information and to register please visit the event site at <http://cait.rutgers.edu/cait/12th-annual-njdot-research-showcase>.



(From left to right): Camille Kamga , Acting Director, UTRC - Penny Eickemeyer, Assistant Director for Program Management , UTRC , and Peter H. Appel - Administrator, Research and Innovative Technology Administration (RITA)
Photo by Steve Goodman



Rudin Policy Series Draws Hundreds

The Rudin Center for Transportation Policy and Management at NYU's Robert F. Wagner School of Public Service continued to host successful events designed to inspire new thinking and promote dialogue on current issues in transportation and to recognize those individuals who continue to improve the field of transportation policy and management.

The Thinking and Doing Breakfast Series seeks to pair current policy leaders and practitioners with top academic thinkers in an effort to bridge the gap between theory and practice. The program continued throughout the Spring and Fall of 2010. Events hosted UCLA's Donald Shoup, NYC Department of City Planning's Deputy Executive Director for Strategic Planning Sandy Hornick, and NYU professor Zhan Guo; NYC Economic Development Corporation President Seth Pinsky with NYU Professor Mitchell Moss; Environmental Protection Agency Regional Administration Judith A. Enck, with Professor Maria Damon; NYCDOT Commissioner

Janette Sadik-Khan, real estate developer Douglas Durst and NYU Professor Vicki Been; MTA Chairman Jay Walder and Professor Mitchell Moss; Housing and Urban Development Regional Administrator Adolfo Carrión with Professor Allen Zerkin.

Rudin's Doctoral Research Series: New Thinking on Transportation and Society, provides an informal setting for the nation's leading young scholars to present their current dissertation research on cutting-edge transportation matters. Students and their work are chosen through a nation-wide competition. Presentations were made by the following Ph.D. candidates Nicholas Klein, Rutgers University; Yang Chen, MIT; Gian-Claudia Sciara, UC Berkeley; Jen Petersen, New York University; Lingqian Hu, University of Southern California; Mike Smart, UCLA; Cuz Potter, Columbia University; Camille Fink, UCLA; and Eric Morris, UCLA. For more details on these programs co-sponsored by UTRC see <http://wagner.nyu.edu/rudin-center/events>.



2010 New York State Transportation Summit

The 2010 Transportation Summit held on September 24th brought together top leaders of federal, state and local public agencies as well as top executives in private industry to discuss major infrastructure and development initiatives in New York State. The conference was designed to improve dialogue and to initiate discussions on how New York's transportation plans might be financed and where new business opportunities might be created. The Agenda for the day also provided a platform for participants to explore public private partnership models that could take NY into its next decade of growth and beyond. UTRC was among the meetings co-sponsors

which also included McGraw Hill, NYSDOT, MTA, PANY&NJ, the NY Thruway Authority and RPA. Dr. Camille Kamga chaired a panel on "innovation" and Dr. Paaswell gave the morning keynote address where he urged participants to focus on priorities, resources and setting a vision. He went on to stress that "above all else (we must) reinforce the fact that NY State is vibrant and will remain the major player in global competitiveness, while maintaining a high quality of life for its citizens and its visitors...It's time to think of our 21st century icons." For more information follow <http://navigatingopportunities.com/dot/index.html>. Additional photos on pg 51.



(From L to R): José Holguín-Veras – Professor, Rensselaer Polytechnic Institute, Camille Kamga – Acting Director UTRC, Nadia Aslam –Research Associate, UTRC, and Danielle Petretta – Assistant Director for Technology Transfer, UTRC



(From L to R): Michael R. Fleischer, Executive Director - New York State Thruway Authority, Robert E. Paaswell – Director Emeritus , University Transportation Research Center, and Stanley Gee – Acting Commissioner, New York State Department of Transportation

The Evaluation of Transportation Investment Projects Presented by Dr. Joseph Berechman

Dr. Joseph Berechman, Professor and Chairman of the Economics Department, at City College presented his findings resulting from the research and publication of his recent book entitled “The Evaluation of Transportation Investment Projects”. The presentation was held on December 1st at a Book Talk reception at NY’s University Club. His new book addresses the issue that throughout the world, the use of some kind of a formal transportation project evaluation procedure is a requirement. Yet, by and large, these are partial; in fact, much weight is often placed on the

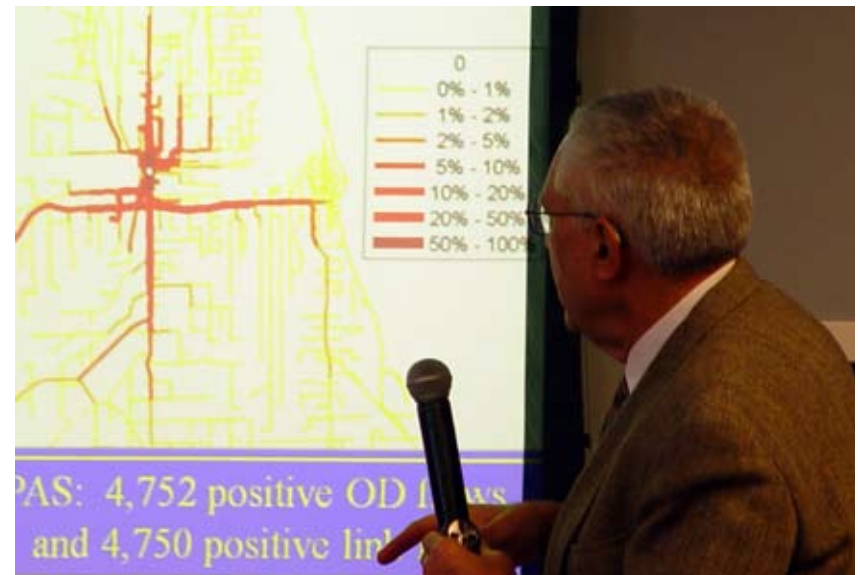
initial –pre-engineering –phases of the planning process, when vital information, such as accurate costs and demand projections, is largely missing. The book’s main objective is to construct a comprehensive and methodical economic, planning and decision-making framework for the evaluation of proposed transportation infrastructure investment projects. To learn more about Dr. Berechman’s research, please follow the link below. <http://www.routledge.com/books/The-Evaluation-of-Transportation-Investment-Projects-isbn9780415777155> .



NYMTC, Rudin Center and UTRC Host Dr. David Boyce

On January 15, David Boyce presented his research, “Practical Implications of Using Consistent Route Flows in Analyses Based On Urban Road Traffic Assignments” to members of the Best Practice Model Group at NYMTC’s offices. Dr. Boyce is an adjunct Professor in the Civil and Environmental Engineering Department of Northwestern University and he collaborated with Hillel Bar-Gera and Marck Nie on this research.

Abstract: Practical analyses of the results from static traffic assignment models are often based on route flows, even though they are often not uniquely determined through a user-equilibrium assumption. In his discussion, Dr. Boyce presented his route flow results for the Chicago region aggregated to selected links for several solutions produced by different methods. He also examined the performance of different solutions in terms of proportionality and how to best apply the results to multiple-class link flow analysis.



Professor José Holguín-Veras Travels to Haiti

Professor of Civil and Environmental Engineering at Rensselaer Polytechnic Institute, Jose Holguin-Veras, traveled several times earlier this year to Haiti and to the Dominican Republic. Dr. Holguin-Veras sought to continue his research and to learn from relief efforts from a logistics point of view, and also to advise governments and agencies involved. Upon his return, he presented his findings and compared them with

disaster relief efforts following Hurricane Katrina in Louisiana to the UTRC audience. On February 19th Jose presented, “What Previous Disasters Teach: The (Really) Hard Lessons of Katrina and Haiti For Humanitarian Logistics”. To view Jose’s presentation through the archived webcast courtesy of our co-sponsor NYMTC, follow <https://www.nysdot.gov/portal/page/portal/main/webcast>.



UTRC Hosts UCLA Professors at CCNY

Dr. Evelyn Blumenberg, Associate Professor of Urban Planning in the School of Public Affairs at the University of California Los Angeles, visited and delivered “Ethnic Neighborhoods and Travel Behavior” to a packed Sciame Auditorium at the Bernard and Anne Spitzer School of Architecture last February. Prof Blumenberg’s research examines the effects of urban structure—the spatial location of residents, employment, and services—on economic outcomes for low-wage workers, and on the role of planning and policy in shaping the spatial structure cities. Her recent research focuses on the travel behavior of immigrants and the transportation expenditure burden of low-income and minority households.

Later, Dr. Brian Taylor visited the Grove School of Engineering. Here he presented, “Reconsidering Equity in Transportation Finance”. Professor Taylor is Professor and Chair of Urban Planning, and Director of the Institute of Transportation Studies at UCLA. His research examines transportation finance and travel behavior. His current projects examine alternative measures of congestion, user perceptions of public transit, the use of technical information by transportation officials, transportation finance equity, and the history of metropolitan freeway development. Dr. Taylor’s presentation explored political, philosophical, and empirical perspectives on finance equity by focusing on current debates over the fairness of road pricing.



UTRC and MTA Convene Meeting of Regional Scholars

The Metropolitan Transportation Authority has an ambitious near-term agenda for improving daily operations and completing the existing set of mega-projects. Both tracks of work present an unparalleled opportunity for the MTA and universities in the region to collaborate.

For faculty and graduate students, MTA operations and capital projects are an ideal test bed – a chance to turn theory into practice and gain invaluable real-world experience. For the MTA and the MTA agencies, universities are a font of talent that can assist the MTA innovate, today, and provide a pool of future MTA professional staff and managers.

To create the kind of symbiotic relationship that will benefit the MTA and universities, UTRC Acting Director, Camille Kamga, and MTA Chief Operating Officer, Charlie Monheim, convened a breakfast meeting between Faculty

and the MTA on November 19, 2009.

Insights were explored and suggestions debated on ways to determine the feasibility of this opportunity and how to implement plans. The range of skill sets the MTA needs is wide – engineering (civil, electrical, computer), architecture, construction, financial management and planning, risk assessment, operations research, quality assurance, IT, security, business development and business systems, and by tapping into the region's talent of both faculty and students participants hope to forge strong and mutually beneficial relationships.

It was apparent that many real and current opportunities exist to marry academic expertise with professional practitioners and critical real-time dilemmas. The process of developing some specific plans and further defining opportunities is ongoing.



Safety Benefits of Roadway Lighting

November 24th, 2009/presented by RPI's LRC
John Bullough and Mark Rea from the Lighting Research Center at Rensselaer Polytechnic Institute, along with Eric Donnell from the Pennsylvania State University, discussed results from a recently-completed study on the safety benefits of roadway lighting at the New Jersey Department of Transportation as part of NJDOT's Technology Transfer Seminar series organized by UTRC. Statistical analyses of crashes and lighting presence along intersections were

described. Analyses of the visual performance afforded by different lighting configurations were conducted. The results are consistent with a safety benefit from lighting caused by improved visibility at night, but to a different extent than has been often assumed in benefit-cost assessments of roadway lighting. Importantly, the results from the visibility analyses and the statistical crash analyses were correlated, suggesting that increased visibility from lighting improves safety.



NJDOT Technology Transfer Seminars

Transportation Links, Global Trade and Economic Development

November 12th/ presented by Dr. Thomas Wakeman

The Panama Canal Authority is investing \$5.3 billion to widen and expand the canal's capacity to service the current generation of 8000+ TEU container ships. When the new canal locks open in 2014, a new era will begin that could significantly change global trading patterns for years to come, just as the initial canal opening did in 1914. There are estimates that as much as 25% of the West Coast current cargo base could be transferred to East and Gulf Coast ports as global trade picks up again. There will only be one chance to gain control of the initial surge, and it will be the deepest East Coast ports with corresponding

intermodal connections and warehousing capacity that will capture this shift in market share.

Thomas Wakeman, Deputy Director of the Center for Maritime Systems at Stevens Institute of Technology, discussed how the State of New Jersey's transportation and supply chain infrastructure could connect the local economic development activities in the State to the emerging global marketplace through its ports both in the north and in the south. The talk addressed the current economic constriction that has impacted the prosperity of many and looked to the future of international trade using maritime services offered at the State's maritime assets.



A Critical Review of Intelligent Transportation Systems: Past, Present, and Future

Thursday, October 29th, 2009 / presented by Dr. Kaan Ozbay

In this seminar, a brief review of the history of "Intelligent Transportation Systems (ITS)" in the US and the rest of the World was presented. Then, current status of ITS deployment and research was discussed with an emphasis on New Jersey. Real-world examples were drawn from the presenter's

experience with ITS projects in the last 15 years. Then, a review of the most promising ITS technologies to relieve congestion and improve safety was presented. Finally, deployment, research, and education needs to make ITS one of the most effective alternatives to address our transportation problems was discussed.





RESEARCH

The research program objectives are (1) to develop a theme based transportation research program that is responsive to the needs of regional transportation organizations and stakeholders, and (2) to conduct that program in cooperation with the partners. The program includes both studies that are identified with research partners of projects targeted to the theme, and targeted, short-term projects. The program develops competitive proposals, which are evaluated to insure the most responsive UTRC team conducts the work.

The research program is responsive to the UTRC theme: “Planning and Managing Regional Transportation Systems in a Changing World.” The complex transportation system of transit and infrastructure, and the rapidly changing environment impacts the nation’s largest city and metropolitan area. The New York/New Jersey Metropolitan has over 19 million people, 600,000 businesses and 9 million workers. The Region’s intermodal and multimodal systems must serve all customers and stakeholders within the region and globally.

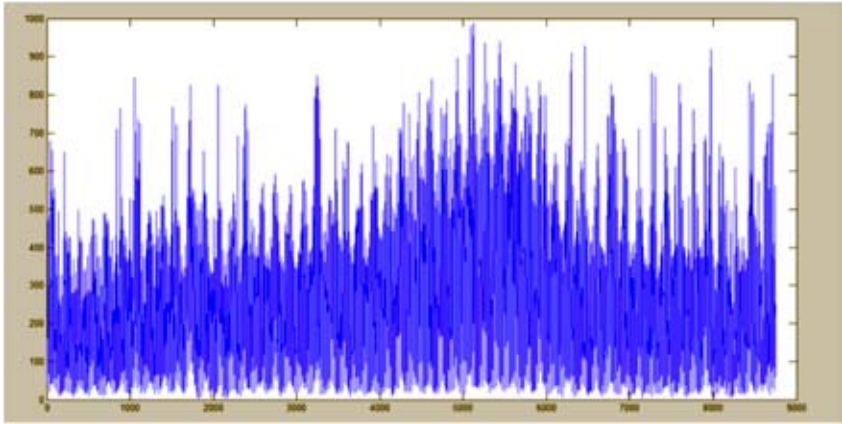
Under the current grant, the new research projects and the ongoing research projects concentrate the program efforts on the categories of Transportation Systems Performance and Information Infrastructure to provide needed services to the New Jersey Department of Transportation, New York City Department of Transportation, New York Metropolitan Transportation Council, New York State Department of Transportation, and the Port Authority of New York and New Jersey and others, all while enhancing the center’s theme.

A Prototype Decision Support System for Optimally Routing Border Crossing Traffic Based on Predicted Border Crossing Times

Adel W. Sadek, Qian Wang,
University at Buffalo, SUNY
Sponsored by RITA/USDOT

The economic vitality of the “Golden Horseshoe”, a densely populated and industrialized region encompassing the Buffalo-Niagara Region, is heavily dependent upon the ability to move goods freely and efficiently across the Canadian-US border. Border crossing delays, the result of increased travel demand coupled with intensified security and inspection procedures,

have become a critical problem with tremendous economic and social costs. The purpose of this study is to develop a prototype system for border crossing traffic management, whose ultimate goal would be to maximize system efficiency and minimize negative impacts of border crossing delays. The proposed prototype consists of two components; a predictive tool to forecast travel time and delays and a Decision Support System (DSS) for optimally routing border-des- tined traffic.



2009 Hourly Passenger Car Volumes (from Canada into the U.S.) at the Peace Bridge.



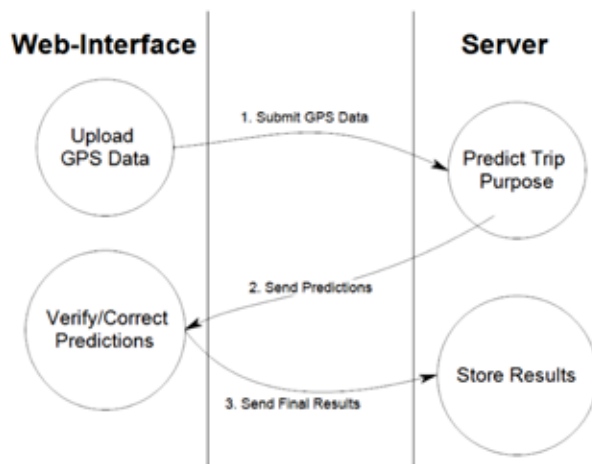
NEW RESEARCH PROJECTS

Automating Web Collection and Validation of GPS Data for Longitudinal Urban Travel Studies

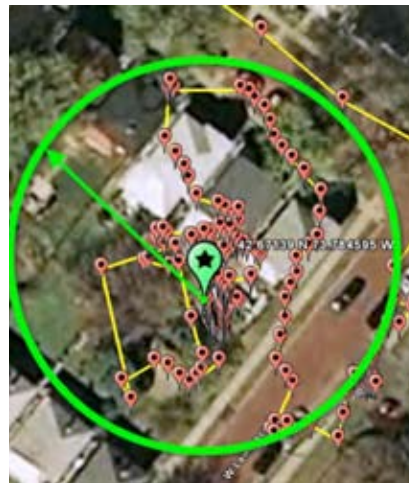
Hongmian Gong,
Cynthia Chen, CUNY
Sponsored by RITA/USDOT

GPS-based travel surveys have become increasingly popular in major cities worldwide. However, methodologies have not been developed to catch up with the enormous amount of data generated by GPS. This research will establish a web-based GIS prototype to speculate trip purpose from GPS data, a task which has proven very challenging

thus far. Traditional surveys are costly and time consuming and are associated with missed trips, illogical trip sequences and imprecise travel time. As an alternative, the prototype will have the functions to collect GPS data from participants through the web, run an algorithm to speculate trip purpose from the GPS data and other transportation and land use data, send back the results to participants for verification or modification, and finally update.



Data flows from Web-Interface to Server.



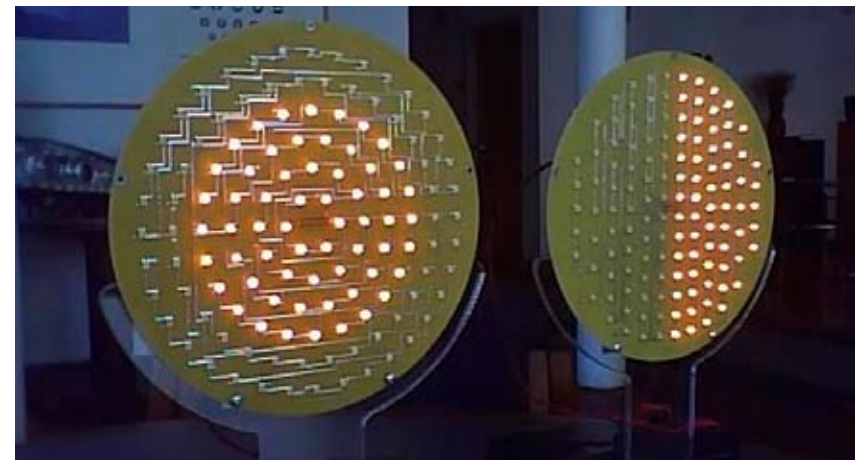
Automated Web Collection
Centroid of clustered points is considered as activity node.

Barricade Lighting System

Mark Rea, John Bullough,
Rensselaer Polytechnic Institute
Sponsored by RITA/USDOT

This research is being performed to develop a series of signals, collectively called the Barricade Lighting System, to better communicate to drivers information about driving conditions and what action they should take. The BLS will go beyond the provision of just a cautionary warning by providing information about a construction site using light emitting diode (LED) light sources. Different colors, spatial arrays, and temporal

profiles can be used in conjunction with wireless controls and radar speed measurements to communicate important information visually to drivers. The signals would have the same form factor as an ITE-compliant barricade warning light, but instead of incorporating only a steady or flashing yellow light, they would be able to display other color and temporal patterns including green or red flashing lights, or shifting and looming yellow lights; each associated with an action a driver should take including higher or reduced speeds, lane changes, or extra caution.



LED lights as part of the Barricade Lighting System developed through the Lighting Research Center at RPI.

Photo by John Bullough

Compression and Mining of GPS Trace Data: New Techniques and Applications for Transportation

Catherine T. Lawson, Jeong-Hyon Hwang, Siwei Lyu, Sekharipuram S. Ravi, University at Albany, SUNY

Sponsored by RITA/USDOT

Widespread availability of inexpensive GPS devices has made it feasible to passively collect a large volume of GPS trace data. Each trace represents the trajectory of a vehicle or a person over time. The volume of this data is extremely large and algorithmic techniques that can efficiently compress, analyze, store and mine the data are needed. Also, this research will develop techniques that have

the potential to provide additional insights to transportation planners by analyzing and mining the trace data and using machine learning techniques for identifying trip purpose, modes of travel, estimates of performance measures of traffic flow, time of day demands and others. A long term goal is to develop a prototype system that can continuously process trace data and proactively notify planners regarding potential events such as bottlenecks and accidents. This project utilizes the combined expertise of researchers in the fields of geography, planning and computer science.



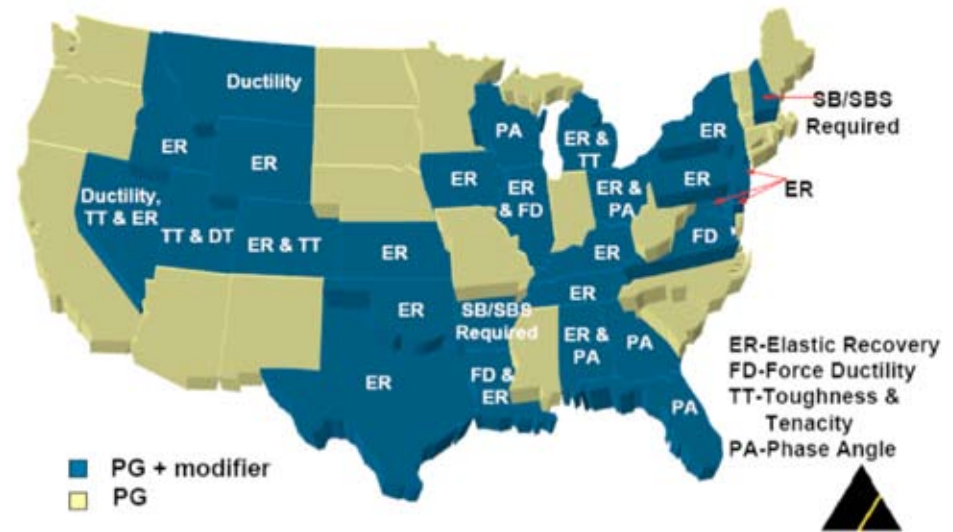
Correlation Between Multiple Stress Creep Recovery (MSCR) Results and Polymer Modification of Binder

Yusuf Mehta, Rowan University
Sponsored by NJDOT/RITA/USDOT

The state of New Jersey has adopted specification limits from the Elastic Recovery test to evaluate modified binders. Since adoption, however, the binder Expert Task Group has recommended the use of MSCR to evaluate modified binders. The goal of this research is to determine whether the parameters measured in MSCR tests and recoveries from Elastic Recovery tests – both recommended by the

FHWA, can be included in the polymer and CRM (crumb rubber modifier) binder material selection specification for the state of New Jersey.

The goals of this research include determining the challenges and successes of using polymer and CRM binder from existing literature and the state of practice, and plans to conclude with recommendations on whether or not parameters from MSCR and ER can be used for such material selections in the state going forward.



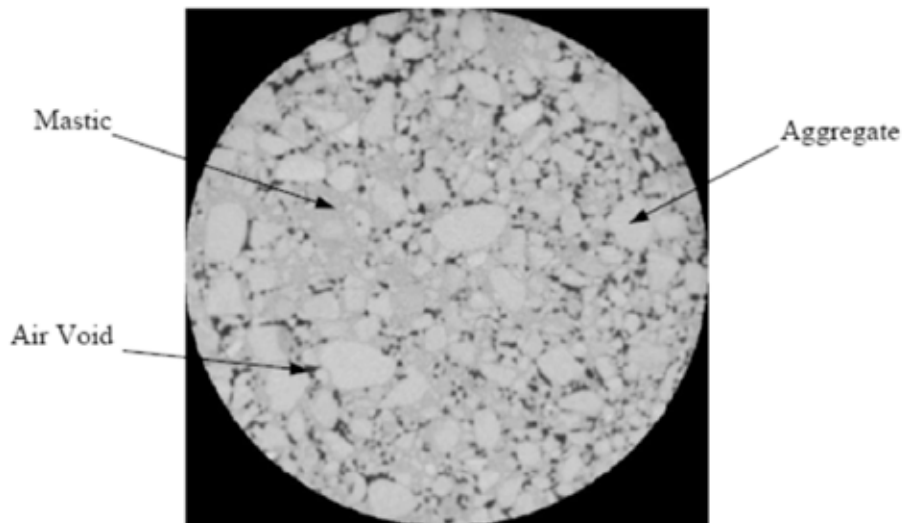
States with PG-Plus Specification (Asphalt Institute, 2005)

Determining Binder Flushing Causes in New York State

Thomas Bennert, Rutgers University
Sponsored by NYSDOT

A flushed pavement – or one that may have a reflective, shiny and tacky surface- is defective and is not acceptable to NYSDOT due to its non-uniform texture and potential safety concern. This research seeks to determine the causes of and prevent future occurrences of atypical flushing, flushing that cannot be attributed to generally accepted factors such as excess binders, low air voids, contamination, etc., and which had occurred in NY in 2007. Recommendations

of this research will lead to the development by NYSDOT, of an enhanced Quality Control/Quality Assurance (QC/QA) program for binder suppliers and Hot Mix Asphalt (HMA) producers plus specifications designed to prevent future issues related to interactions of Performance Graded (PG) Binder crude sources, PG Binder modifiers, and/or aggregates native to New York State. Work planned includes the extraction, recovery, and pg grading, and compatibility and resistance evaluation of flushed and unflushed field cores and laboratory prepared mixes and blends.



X-ray CT Image (Kassem et al. 2009)

Effects of Overweight Vehicles on NYSDOT's Infrastructure

Michael Ghosn, Neville A. Parker, Kolluru Subramanian, The City College of New York, CUNY
Sponsored by NYSDOT

The objective of this project is to develop models for assessing the cost of damage caused by overweight vehicles to New York State's highway pavements and bridges. The project will adapt and develop

methodologies and computer programs to quantify the damage and associated costs associated with different categories of heavy trucks including: 1) Trucks satisfying the legal weight limits; 2) Permitted overweight divisible load vehicles; 3) Special hauling vehicles; 4) Superloads; and 5) Non-permit trucks violating the legal limits or trucks violating their permit limits.

NYSDOT Road Network – Total Pavement Sections



Legend: Blue – Asphalt; Red – Overlays (asphalt over concrete); Turquoise - Concrete

Field Methods for Determining Lead Content in Bridge Paint Removal Waste

Lisa B. Axe, New Jersey Institute of Technology
Sponsored by NYSDOT

The overall objective of this research is to develop a field approach for assessing bridge paint waste as hazardous or non-hazardous. The research team will apply the field-portable X-Ray Fluorescence (XRF) meters and field spectrophotometers to assess their effectiveness in providing reliable lead concentrations present in

bridge paint waste and wash water. Field and laboratory results will then be compared and correlated to develop a model that a state DOT can use to determine if lead based hazardous waste will be generated or not for bridge painting projects, thus resulting in potential cost savings.

Freight Demand Estimation From Secondary Sources

José Holguín-Veras, Xuegang (Jeff) Ban, Rensselaer Polytechnic Institute
Sponsored by RITA/USDOT

This project will focus on the development of required mathematical algorithms that can be used to determine future freight needs and demands when the amount of cargo produced and attracted by each zone is unknown or uncertain - a

key limitation to origin-destination matrices that require the amount of cargo as an input. One benefit of this research is that it will enable MPOs to produce quick estimates of freight OD matrices on the basis of secondary data sources such as traffic counts, a technique referred to as ODS or origin-destination synthesis.



Grade Determination of Crumb Rubber-Modified Performance Graded Asphalt Binder

Thomas Bennert,
Rutgers University
Sponsored by NYSDOT

New York State is interested in incorporating discarded tires into crumb rubber and utilizing as performance graded asphalt binder (PGAB) contingent on its ability to be properly tested. The main objective of this research is to determine if the asphalt rubber binder, produced using the preferred

Terminal Blend procedure, can be accurately tested using current Superpave Performance Grading procedures. Mixture performance verification test results and comparison between the Terminally Blended Crumb Rubber-Modified Asphalt Binders and typical neat and polymer modified asphalt binders will be delivered as well as recommendations drawn as to conformance to standard criteria established by AASHTO M320.



Typical Crumb Rubber Used in Asphalt Binders and Mixtures

Integrated Vegetation Management Program Enhancements for NYSDOT

Christopher Nowak, College of
Environmental Science and
Forestry, SUNY
Sponsored by NYSDOT

NYSDOT has committed to using an Integrated Vegetation Management (IVM) approach designed to mitigate environmental impacts and to meet roadside right-of-way (ROW) objectives. This new research and development project

will allow for important expansion and refinement of IVM for NYSDOT and the right-of-way industry in general. Tasks include updating the State's plan, developing decision tools to improve vegetation selection and field tests of physical (hot foam) and chemical (glyphosate) treatment methods to control undesirable plants which are efficient and safe for workers and the environment.

Mainstreaming Climate Change Adaptation Strategies Into NYSDOT Operations

David Major, Columbia University
Sponsored by NYSDOT

The proposed work will assist NYSDOT in integrating climate change risk assessment and management into the Department's decision, policy and planning processes utilizing established and effective risk management and adaptation planning methods. The work will create a 'fast-track' climate change planning process for the bureaus, offices and program areas of the NYSDOT, building on the broader

context of adaptation experience. This approach will result in mainstreaming climate change adaptation strategies into Department operations and will form the foundation needed to ensure that the transportation infrastructure which is being designed, constructed and maintained today is equipped to adapt to climate changes in the future. Effective mainstreaming is imperative to avoiding costly future investments and potential disruptions to transportation operations.

Mobile Source Air Toxics (MSATs) Mitigation Measures

Marta A. Panero, Rae Zimmerman,
New York University
Sponsored by NYSDOT/RITA/
USDOT

This project is being undertaken to assist NYSDOT in clarifying federally required procedures regarding the evaluation of potential mobile source air toxics (MSATs) prior to initiation of federally funded transportation projects. This project will develop guidelines to clarify these

issues and help NYSDOT implement a "triage" process to evaluate which projects merit further analysis and which ones may proceed without further appraisal. The implementation of the results of this study should help to minimize delays in project start-up which have been occurring due to lack of clear guidelines and to ensure NYSDOT stays in compliance with Federal regulations.

Modeling Mechanistic Properties of Unbound Pavement Materials for New York State

Lynne H. Irwin,
Cornell University
Sponsored by NYSDOT/RITA/
USDOT

The overall goal of this project is to expand on earlier research results, creating models of seasonal change in unbound (subbase and subgrade) layer moduli that are more broadly applicable across all of NY. Initial models, only covering conditions in roughly 60% of the state,

excluded areas where substantial roadway mileage exists and soil and climate conditions vary. The objective is to cover a range of climatological and materials conditions that will result in predictive models of pavement mechanistic properties that are applicable to at least 90 percent of the area of the state. The study also seeks to update the matrix of the soil and climatic zones important to pavement design in New York State.



Areas where seasonal models are out of range (in grey) due to the combined effects of median subgrade P.I. greater than 12 and average frost penetration out of range. Possible locations for test sites for this project are marked by X.

Nighttime Highway Construction Illumination

Mark Rea, John Bullough,
Rensselaer Polytechnic Institute
Sponsored by NYSDOT

The overarching goal of this project is to design and develop guidelines for lighting, signage, markings and delineation systems for use in nighttime highway construction work zones that are scientifically sound, yet practical-to-implement. Recommendations will be derived that meet the visual needs of workers and drivers in and near

work zones and which reduce the potential for visual chaos in the nighttime work zone environment. These recommendations will be based on principles from the published literature and from the project team's previous experience in the areas of visual performance, glare and lighting technologies, and will also be based on the results of experimental investigations, with validation through full-scale field mock-up demonstrations.



High-mast Work Zone Lighting
Photo by Dennis Guyon

NYMTC Post-Processor Software Development

Huaizhu Oliver-Gao, Johannes
Gehrke, Cornell University
Sponsored by NYMTC

In order for outputs generated by NYMTC's New York Best Practices Model, which is used to forecast future travel patterns, there is a considerable amount of additional processing needed so that BPM outputs can be used as inputs to federal regulatory emissions models. New Post Processor Software (PPS) is therefore required to meet the needs of NYMTC's air quality conformity and Congestion Management System. This research will provide summarized output

necessary to evaluate conformity analyses, and analyses for the Congestion Mitigation and Air Quality (CMAQ) and Transportation Enhancement (TEP) Programs. The function of the PPS is to fill the gap between NYMTC's Best Practices Model and EPA's emissions models (both MOBILE6.2 and MOVES). The newly developed PPS will consist of two core entities: the Air Quality component and the Congestion Management System component. The scope of this work focuses on the air quality component.

Pedestrian Behavior in New Jersey

Robert Noland, Rutgers University
Sponsored by RITA/USDOT

This research will work to develop an understanding of the demographic, vocational, land use, and infrastructure elements that are associated with increased walking behavior and perceptions of a safe pedestrian environment. Spatial and statistical models will be developed based on survey data collected by the Alan T. Vorhees Transportation Center. Analysis will offer the ability to determine

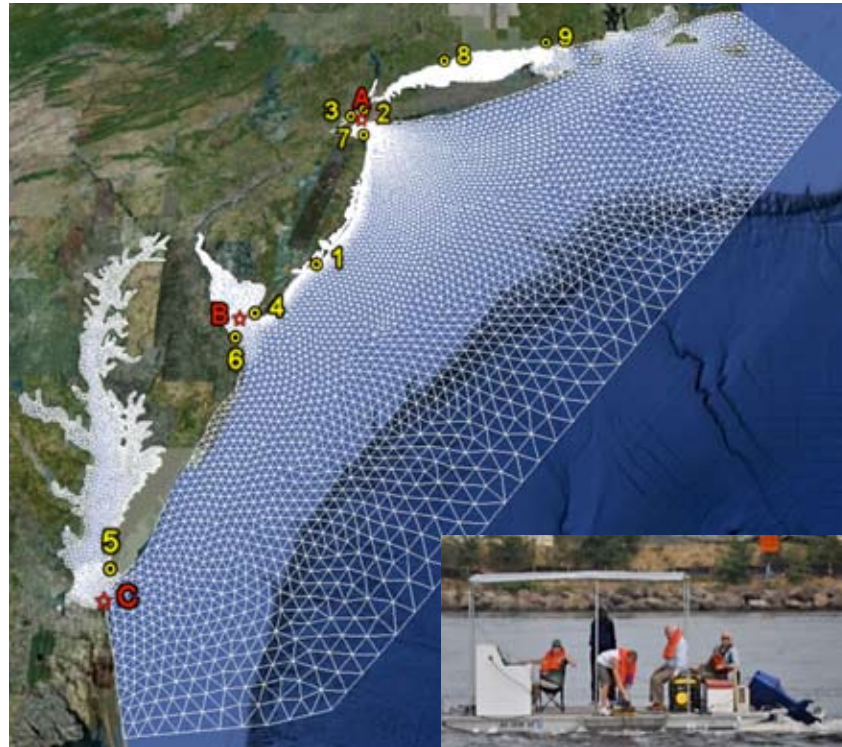
associations between demographic and socioeconomic indicators and the level of walking, how infrastructure elements either promote or hinder pedestrian activity, how perceptions of safety may affect walking, and how all these factors are associated with different types of walking trips, whether utilitarian or recreational. This project will also allow for integration of pedestrian safety patterns based on a spatial analysis of pedestrian fatalities and injuries.

Potential Tidal Power for New Jersey

Hansong Tang, The City College of New York, CUNY
Sponsored by NJDOT/RITA/USDOT

With combined computer modeling and field measurement approaches, this project will evaluate potential tidal energy distribution along NJ's coast and at tidal zones of adjacent rivers. Questions to be analyzed include what tidal cur-

rents are available, where do they occur, are there environmentally sensitive areas, etc. Several computer models and computational fluid dynamics (CFD) analysis will be utilized to help identify possible locations and determine the total potential for tidal power generation needed to help meet State goals for achieving 20% renewable energy by 2020.



The computer model grid and locations of observation stations. Numbers – tide station, letters – current station. Global mesh.

Field measurement of tide at NJ coastlines

Recycled Concrete Aggregate in Portland Cement Concrete

Douglas Cleary, Rowan University
Sponsored by NJDOT/RITA/
USDOT

This research seeks to identify the benefits and barriers to the use of recycled concrete aggregates (RCA) in Portland Cement Concrete and that the use of RCA meet the quality requirements and needs of NJDOT. Results will include the documentation of best

practices, an implementable guide specification and quality control procedures for the use of RCA in concrete and/or recommendations to not use the material. In addition, this study will evaluate previous research on RCA and consider and resolve discrepancies that may be found and put into context with the specific needs, product availability and conditions faced in NJ and by NJDOT.

Reliability of New York State Bridge Inspection Program

Anil Kumar Agrawal, The City College of New York, CUNY
Sponsored by NYSDOT

This study will provide quantitative evaluation of the variability associated with New York State Bridge Inspection Program. This is required to confirm that inspections provide reliable results using common practices. A thorough review of current inspection

procedures such as those of the state, FHWA and AASHTO, will be conducted. In-depth field research and analytical investigations will also be carried out. The project's goal is to quantitatively document the variability associated with the bridge inspection program, suggest improvements to policy and procedures and recommend areas requiring further training, if needed, to reduce any variability.



Testing a Ground Penetrating Radar (GPR) Unit for the Location of Fiber Optic Conduits
NJDOT/UTRC Project (Fadi Karaa, Associate Professor of Critical Infrastructure, NJIT)

Underground Conduits Without Trace Wires

Fadi Karaa, Edip Niver, New Jersey Institute of Technology
Sponsored by NJDOT/RITA/
USDOT

This project seeks to investigate methods to locate conduits which exist alongside NJ highways and owned by NJDOT, that have missing or damaged copper trace wires, typically necessary for easily locating conduits through transmitters so as not to get damaged during any drilling or boring. Identify-

ing technological alternatives and determining their cost effectiveness, ease of implementation and accuracy will be reviewed. This research will investigate and identify innovative means for locating underground conduits, evaluate and compare alternative solutions, and identify and document the most effective systematic solution. A comparative matrix including product process combination rankings will also be developed.

Using Lighting to Alter Driver Behavior

Mark Rea, John Bullough, Rensselaer Polytechnic Institute/Lighting Research Center

Sponsored by NYSDOT

This research will investigate lighting approaches for two roadway applications with the objective of identifying configurations of lighting that can encourage slower speeds at curved ramps, and can

encourage drivers to maintain their speeds in locations prone to traffic congestion. Based on the results of initial studies and of evaluations of actual lighting installations, the project team will develop preliminary specification guidance to NYSDOT about where, when and how similar approaches could be used at other locations across New York State.



Photo by Howard Ohlhous, LRC

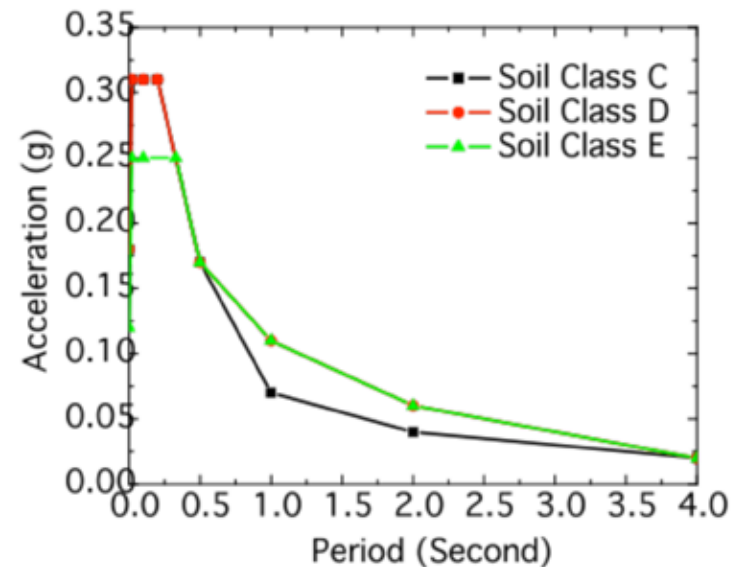
Verification/Development of Seismic Design Specifications for Downstate Zone

Anil Kumar Agrawal, Huabei Liu, The City College of New York, CUNY

Sponsored by NYSDOT

The outcome of this project will allow the NYCDOT Seismic Design Guidelines Report (September 2008) to be appropriately used with the AASHTO LRFD Specifications for the Downstate Zone leading to the promotion of a consistent statewide seismic design policy. This study will investigate the validity and reasonableness of 2008 NYCDOT spectra through

a detailed review of assumptions made during development of these spectra and calculation of demands imposed on typical bridge components in the downstate area. In addition, since spectral values of 2008 NYCDOT spectra are significantly different from those of 2007 AASHTO Guide Specifications, it is also important to investigate economical consequences and develop estimates of design and construction costs differences of 2008 NYCDOT spectra over those of AASHTO LRFD Guide Specifications.



500-yr Spectra of Soils on Rock of Any Type (Hr > 100ft), NYCDOT Seismic Design Guidelines Report

The University Transportation Research Center strives to stimulate innovative and imaginative research by faculty in new and emerging areas related to transportation. The UTRC Faculty Development Minigrants seeks to fund faculty members in the development of a research working paper in their area of interest. The topic of the paper can involve any area of transportation including engineering, policy,

economics, planning, travel behavior, sociology, management, law, and technology. The working papers are completed within a year and then independently peer-reviewed and ranked. The author of the best paper is then eligible to receive an additional substantial grant to serve as Principal Investigator for a full-scale study on the topic. In 2009, two minigrants were awarded and are listed below.

UTRC Faculty Development Minigrants

Research Paper

Three-dimensional Analysis of Underground Tunnels in Liquefiable Soil Subject To Earthquake Loading
Towards 'Multiplex' or Next Generation Infrastructure

Faculty

Huabei Liu, Ph.D.

Hillary Brown, FAIA, LEED, AP

Institution

The City College of New York

The City College of New York



UTRC'S NEWSLETTER & WEBSITE

UTRC's Newsletter, Research News, is published quarterly and provides information to transportation professionals about research, education, and outreach activities in Region 2. Research News is available online.

Research News
Fall 2010

November 2, 2010 www.utrc2.org

INSIDE

- > Director's Letter
- > News & Notes
- > Recent Events
- > Upcoming Events
- > Research Highlights & Publications

UPCOMING EVENTS

- > Thinking & Doing Breakfast Series - Fall 2010
- > New Thinking on Transportation

DIRECTOR'S LETTER

It has been a year since I assumed the role of Acting Director of the University Transportation Research Center. Please know that the high level of expertise, collaboration, and dedication of our staff and members continues to be well received. My thanks to each of you.

On August 20, 2010, we lost a dear friend, Robert Olmsted. Bob was more than just a wonderful person; he was so kind and considerate to us that we always welcomed seeing him at every opportunity and frequently at our Visiting Scholar Seminar series. Bob was one of New York's leading transportation planners and we will all miss him.

During the past months, we have been actively participating at conferences, seminars, workshops, and visits to our partners. These venues go a long way toward promoting our center theme of "Planning and Managing Regional Transportation Systems in a Changing World" and the work we do.

On June 14 we cohosted "Airports: 21st Century Modernity for the NY Metro Region" with the

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

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

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

UNIVERSITY TRANSPORTATION RESEARCH CENTER

Region II
New York
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the City College of New York

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New RFPs [full list]

- Feasibility and Efficacy of Public Transportation Partnerships (2/23/11)
- 2011 UTRC Faculty Development Minigrants (4/30/11)
- 2011-12 UTRC Research Initiative (4/30/11)
- 2011-12 UTRC Advanced Technology Initiative (4/30/11)

Congratulations!

Prof. Paaswell is the recipient of this year's Distinguished Contribution to Transportation Education and Research Faculty. Buz will be presented with an award recognizing his work and contributions to university transportation education and research throughout his career on January 22, 2011 at the CUTC Awards Banquet. For more information, please visit CUTC Website or CUTC Awards Banquet Registration.

Upcoming Events [full list]

- Transportation Research Board (TRB) 90th Annual Meeting (1/23/11)
- International Spatial Statistics 2011 Conference (3/23/11)
- Intelligent Transportation: Trends and Perspectives (4/8/11)

AITE Graduate Scholarships

Sept. 11th Memorial Program

USDOT/RITA National UTC Program

Annual Report

In the News...

Our Consortium

UTRC WebMail

UTRC II Submission System

2010 New York State Transportation Summit, September 24, 2010

UTRC Sustainable Transit Symposium, May 7, 2010



Photos by Bill Summers and Rodolfo Leyton



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