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PROGRAM PROGRESS PERFORMANCE REPORT

*Submitted to the Office of the Assistant Secretary for Research
and Technology*

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Name of Grant: University Transportation Center

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Signature  _____

Penny Eickemeyer, Associate Director for Research, UTRC

CONSORTIUM MEMBERS

City University of New York, Clarkson University, Columbia University, Cornell University, Hofstra University, Manhattan College, New Jersey Institute of Technology, New York Institute of Technology, New York University, Polytechnic Institute of NYU, Rochester Institute of Technology, Rowan University, Rensselaer Polytechnic Institute, Rutgers University*, State University of New York, Stevens Institute of Technology, Syracuse University, The College of New Jersey, University of Puerto Rico

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This report will cover UTRC's three mission areas: Research, Technology Transfer, and Education for activities that occurred under the Grant# DTRT13-G-UTC32 during this reporting period.

1. ACCOMPLISHMENTS

A. Goals and objectives:

- a) Research: To support the USDOT Strategic Goals and to advance the state of practice in planning and management of regional transportation systems; the research program consists of both agency-initiated and faculty-initiated studies
- b) Education and workforce development: To improve the knowledge base and approach to problem solving of the region's transportation workforce
- c) Technology transfer: To increase the awareness and level of information concerning transportation issues facing Region 2 to the education, research and practicing community; disseminate project reports, studies, analysis, and use of tools to the community; and provide unbiased information and testimony to decision-makers concerning regional transportation issues consistent with the UTRC theme.

B. Accomplishments under these goals:

a) Research

Projects initiated during this reporting period:

- Developing Generalized Linear Mixed Models For The Strategic Highway Safety Planning Process - UPR
- Traffic Prediction Using Wireless Cellular Networks-NYIT
- Measuring Parking Intrusion in New York City Neighborhoods using Parking Tickets and Vehicle Plate Registration Data-NYU
- Monitoring Infiltration Capacity of Different Types of Permeable Pavement-Manhattan College
- Analysis of Curved Weathering Steel Box Girder Bridges in Fire – Manhattan College
- Environmental Impacts of Oil and Gas Brine Applications for Dust and Ice Control in New York-Manhattan College

- Efficacy of the Bacteria Encapsulation Concrete Self-Healing Method in a Harsh Environment – Manhattan College

Projects continuing during this reporting period:

- Investigating Temporal Effects on Truck Accident Occurrence and Severity Level in NYC-RPI
- Characterization and Modeling of Photon Absorption in Asphalt Materials- Columbia, Manhattan College
- Hosting, maintenance and support for NYMTC PIMS-NJIT
- Feasibility of Lane Closures Using Probe Data, CCNY, NJIT
- Freight Costs at the Curbside-CCNY, RPI
- Evaluating the Role of Private Investment in Life Cycle Management of NYS Infrastructure Assets- Cornell
- Development of a new connected eco-driving system at signalized intersections with adaptive signal- NYU-POLY
- Analyzing Willingness to Improve the Resiliency of New York City's Transportation System-Cornell
- Understanding Transit Finance: An Analysis of Transit Funding Around the World – Columbia
- Impact of Polymer Modification on Mechanical and Viscoelastic Properties of Binders- Rowan

Examples of Activity this period:

- Efficacy of the Bacteria Encapsulation Concrete Self-Healing Method in a Harsh Environment-Manhattan College
- An undergraduate student was selected to work on the project and has begun the literature review.
- Environmental impacts of oil and gas brine applications for dust and ice control in New York -Manhattan College
- The students are currently conducting a literature review.
- Analysis of Curved Weathering Steel Box Girder Bridges in Fire- Manhattan College
- The computer laboratory for three undergraduate students was prepared and the Abaqus workstation was ordered. The three students have been trained to work effectively with Abaqus to perform heat transfer and structural analyses. The students are working on two parallel tasks:
- Convergence studies using 2D Steel Box Girder cross-sections to determine the appropriate mesh size
- Verification of composite action behavior in Abaqus for a 3D Wide Flange Girder using existing test data

- Monitoring Infiltration Capacity of Different Types of Permeable Pavement- Manhattan College
- A kick-off meeting was held with personnel of the Urban Watershed Management Branch of the USEPA's research division at their facility in Edison NJ. The research team visited the parking lot, which we will be monitored and participated in a demonstration of the monitoring techniques. A monthly monitoring of infiltration on the different pavements in the parking lot will begin.
- Analyzing Willingness to Improve the Resiliency of New York City's Transportation System- Cornell
- Contacts with marketing companies were initiated with the goal of buying a web sample of adults living in the NYC Metropolitan Area

Other Research Activity:

A new RFP was issued on October 1 for UTRC-sponsored projects for 2015 projects. Projects in faculty-initiated, emerging investigators, research cluster teams, and education/technology transfer categories will be considered. Submissions are due December 2, 2014. Proposals will be reviewed by external reviewers and selections will be made during the next reporting period

b) Education and workforce development

During this period, UTRC accomplished the following:

NYMTC/UTRC September 11th Memorial Program Academic Initiative:

NYMTC agreed to fund two additional interns, allowing the 9th year of the program to proceed during the 2014-15 academic year. These two students and their topics are:

- Gauri Jumde, Masters student in urban planning at the Robert F Wagner School of Public Service, NYU. - **Regional Bicycle – Pedestrian Handbook at NYMTC –**
- Dan Wan, Ph.D. Student, Department of Civil Engineering (CUNY)- **Customer Perceptions of Select Bus Service Enhancements at NYCDOT**

Both of these students have started their internships and are in the process of refining their topics in consultation with their agency supervisors.

Advanced Institute for Transportation Education (AITE):

Thirteen applications were received for the 2014-2015 academic year for the AITE Program; of which only five students were selected on June 24, 2014. The following students, all transportation engineering master students, were selected:

- Najwa Doughman at NYU/Poly –Wagner
- Lillian Gordon-Koven at NYU/Poly-Wagner
- Sandy Johnston at SUNY Albany
- Ethan Warren at SUNY Albany
- Gary Jordan at SUNY Buffalo

Development of Management Training for NYSAMPO

Initial discussions and preliminary planning for a training program were undertaken during this reporting period between representatives of the New York State Association of Metropolitan Planning Organizations (NYSAMPO) and UTRC. A contract will be executed between UTRC and NYSAMPO to develop a management training program for MPO staff throughout the State. The CUNY School of Professional Studies will be enlisted to develop the curricula and provide the training.

Three areas of training were requested and will be provided. These include Technical and Analytic Planning Skills, Non-Analytic Planning Skills, and Managerial Skills. The program will be rolled out in phases to allow for revisions if necessary as the program continues. Possible formats for the classes (self-paced e-learning, webinar, instructor led/online, classroom based) are currently under discussion.

c) Technology Transfer

The following events were held or planning has begun for them during this reporting period.

- *NJDOT Technology Transfer Presentations Selected*

The first NJDOT Technology Transfer presentation for 2014-2015 was held on Friday October 17, 2014 at NJDOT headquarters. The presenter was Dawitt Negussey, University of Syracuse on his UTRC Project, Investigation of the Carrs Creek Geofoam Project.

Other selected topics to be presented throughout the year include:

Date	Topic	PI(s)	Institution(s)
November 14, 2014	Road Traffic Congestion	Herb Levinson and John Falcocchio	UTRC & NYU Polytechnic Institute
December 11, 2014	Alain Kornhauser	Smart Driving Cars	Princeton University
December 15, 2014	John Bullough	Warning Lights for Maximizing Worker Safety	Rensselaer Polytechnic Institute

- *Connected Vehicles Conference Planned*

Due to the success of two previous conferences, which started to organize and build a community of researchers, industry and government partners to work towards supporting developments in the area of connected and self-driving vehicles, UTRC is co-sponsoring the *Third Symposium on Connected and Autonomous Vehicles: Smart City Market Alignment for Roadway Technologies Symposium* (The SMART Symposium). This event will be held at the SUNY College of Nanoscale Science and Engineering (CNSE) in Albany, NY on November 5, 2014, and is open to the public. Accepted keynote speakers are Joan McDonald, Commissioner of the New York State Department of Transportation and Helder Antunes, Senior Vice President for Cisco’s Technology Group. The SMART Symposium will focus on University Research Assets, Technology Innovations and available Capital and Economic Development incentives that together offer numerous opportunities for the successful deployment of Connected Vehicles, particularly in New York State.

To leverage the value of the 3rd Connected and Autonomous Vehicle Symposium, UTRC is organizing a workshop for November 6 which include key stakeholders that have been invited to be part of a NYS Connected and Autonomous Vehicle Consortium. This consortium will lead the development and deployment of connected, autonomous and automated vehicles in New York State by identifying test bed opportunities and applications through the coordination and cooperation of government, industry and academia. The November 6 workshop will also feature Peiwei Wang, Ph.D. of Noblis and Kate Hartman of USDOT who will present about the upcoming FHWA call for proposals on the Connected Vehicle Pilot Deployment Program.

- *Newsletter publications released*
The fall 2014 research news edition will be sent out in the first week of November.
- *Brief video clips of interviews with PIs*
UTRC has posted a video briefing of the completed project titled; ***Data Collection and Econometric Analysis of the Demand for Nonmotorized Transportation***. The principal Investigator for this project was Dr. Ricardo Daziano from Cornell University. The video is available on the project's website:
<http://www.utrc2.org/research/projects/data-collection-and-econometric-analysis>
- *Annual report*
Nothing to report

d) Opportunities for Training and Development

Our seminars and workshops are designed to educate the transportation community on current issues in policy and best practices as well as foster meaningful discussion on these topics. We also provide funding to the September 11th Memorial Program to select current students to serve in internship positions in regional and local agencies to enhance their educational experience.

During the reporting period as discussed above, applications were received and selections were made for the September 11th Memorial Program and AITE Program. Six applications were received for the September 11th application process and thirteen for the AITE selection.

C. Dissemination of results:

Nothing to report

D. Plans for next reporting period:

- a. Volvo Research Education Foundations meeting involving all of their 10 Centers of Excellence (CofE) will be held in NYC at the Ford Foundation (October 28-30) organized by the Center for Sustainable Urban Development at Columbia University. Because of UTRC's affiliation with the Metrofreight CofE, CCNY faculty member Alison Conway and one of our agency partners, NYMTC, will be participating directly in a panel on "Why Bother About Urban Freight?"
- b. Third Symposium on Connected and Autonomous Vehicles: Smart City Market Alignment for Roadway Technologies Symposium, as discussed above, will take place on November 5 and 6, 2014.
- c. UTRC will sponsor a Technology Symposium on Ground Transportation and data on November 19, 2014 at one of UTRC's new consortium schools, the New York Institute of Technology in Manhattan. Topics such as vehicle technology, big data and sustainable technology will be covered. Over 30 abstracts were submitted for the opportunity to present and selections will be made on a competitive basis.
- d. A UTRC visitor scholar seminar featuring Dr. Susan Shaheen from Berkeley University will take place on December 10, 2014. She'll present on the topic of *Innovation and Disruption in Urban Mobility*.
- e. UTRC will host a presentation on *Connected Urban Mobility* by the Strategic Advisor to Cubic Transportation Systems; Larry Yemack on December 16, 2014. The presentation will be followed by a panel discussion.

2. PRODUCTS

Products this period

Nothing to report at this time on this grant.