URITC & RIDOT Join Forces On Research Program

The URITC and the Rhode Island Department of Transportation (RIDOT) have collaborated on many research and educational projects. As a result of these successful collaborations, the URITC and RIDOT are now establishing a joint research program to address a range of issues that impact RIDOT programs and coincide with the theme of the URITC. The goal is to leverage research dollars and to encourage the development of proposals that satisfy RIDOT’s research needs.

The URITC and RIDOT project selection processes have been adapted and are now integrated. There will be one call for problem statements each year. When problem statements are selected by the Rhode Island Research Advisory Committee, a request for proposals will be sent to the submitting Principle Investigators. Proposals will be evaluated using similar criteria as in prior years. Projects selected will be a mix of applied, basic and advanced research as is required for the URITC grant. All proposals selected for funding as a part of this joint research program will be managed by the URITC.

This program will not eliminate RIDOT’s funding of studies that address needs which arise during the year. As has been the case in the past, RIDOT will continue to solicit assistance from URI faculty for specific problems based upon the faculty’s expertise.

On Dec. 4, the URITC and RIDOT held a forum to address the direction of the research program and give RIDOT personnel and URI professors an opportunity to exchange ideas and explore research areas.

“I see this collaboration as a way of re-energizing and elevating our research program,” said Colin Franco, Associate Chief Engineer – Research and Technology Division. “This joint program will help us create more synergies with the research faculty at URI to the benefit of all.”

Developing Training and Educational Materials for the TranSim IV Driving Simulator

At the undergraduate level, there are current and proposed courses at URI concerning human factors, transportation systems, simulation, and psychology that could benefit from exposure to and usage of the driving simulator.

At the graduate level, students could learn to operate and conduct research studies using the simulator in many of the same disciplines mentioned above.

For purposes of teen driving, university tours and K-12 outreach, simple driving scenarios must be designed that demonstrate the capabilities of the simulator and heighten public awareness of safe driving practices.

The students who complete drivers’ education with and without the use of the simulator will be compared.
2009 Research Projects

Feasibility Study to Increase Utilization at the Port of Davisville (Quonset, RI)

Principal Investigator: James Kroes
Completed Project

This project was a collaborative effort between the University of Rhode Island College of Business Administration (CBA) and the Quonset Development Corporation (QDC), who operates the Port of Davisville.

This project investigated the feasibility of establishing container operations at the port to serve local markets. Shipping containers through the Port of Davisville will benefit the local community in a number of ways including:

- **Increased Environmental Sustainability:** Reducing the distance that containers are moved via less environmentally efficient modes (rail and truck) and increasing the use of more efficient methods (ocean shipping) will decrease the environmental impact associated with the movement of containers.

- **Decreased Infrastructure Use:** By moving containerized goods closer to customers in the Rhode Island area via ocean shipping, the volume of containers utilizing road and rail assets will decrease, which will reduce the deterioration rate of these assets.

- **Economic Benefits for Local Importers and Exporters:** This project will identify geographic areas in which it may be more economical to ship containers through the Port of Davisville, compared to current practices. Firms located in these areas may be able to reduce their cost structures and improve their competitive advantages by utilizing the Port of Davisville.

The study identified local and regional customers that could reduce their transportation costs by utilizing a container barge feeder service between the Port of Davisville and the Port of New York and New Jersey.

Utilizing the Port of Davisville (Quonset, RI) as a Port of Entry

Principal Investigators: James Kroes and Paul Mangiameli
Ongoing Project

This project is a continuation of the previous research study. This study investigated the possibility of utilizing the Port of Davisville for shipments directly to and from international ports (i.e. as a port of entry and departure.)

Utilizing the Port of Davisville for direct container freight shipments between foreign ports will possibly reduce the costs associated with shipping containerized freight for business, reduce port congestion at other east cost ports, and provide economic benefits to the local economy through job creation and lower shipping costs for businesses.

Pervious Concrete Research Facility: Winter Performance and Enhancement of Pollutants Removal

Principal Investigator: Vinka Craver
Ongoing Project

This project proposed the development of a pervious concrete research facility for the purpose of studying winter performance and enhancement of pollutants removal.

The study will accomplish several objectives:

- Determine the effectiveness of pervious concrete for the removal of organic and inorganic compounds dissolved in urban stormwater runoff.

- Evaluate the performance of pervious concrete under variable temperature and hydraulic conditions.

- Formulate an effective winter maintenance practice to promote the pervious concrete pavement.

- Create an educational facility for local school visits and support courses at URI.

The Rhode Island Department of Transportation is in discussions with Professor Craver to consider extensions of this project to develop a more robust facility.
**Summer Academies**

The URITC hosted three one-week academies this summer to introduce high school students to transportation careers related to business, construction and engineering. These programs were funded by the Rhode Island Department of Transportation and the Federal Highway Administration.

The 10 students in the Business Academy learned about managing a company’s supply chain, such as planning, purchasing, production, transportation, storage & distribution and customer service.

The 13 Construction Academy students earned the OSHA 10-hour certification and the flag person certification. They also learned about blueprint reading, estimating, construction math, surveying and layout and starting their own construction business.

The 18 Engineering Academy students learned about highway design, bridge design, traffic engineering, water resources, environmental engineering, geographic information systems, geotechnical engineering, reading a scale, blueprint reading, surveying and preparing an estimate.

**NCCDC**

Despite a few events being cancelled as a result of the tough economic times, 2009 was another successful year for the National Construction Career Day Center.

By the end of the year, 56 events will have been held in 28 states. That’s only one event and five states shy of last year’s records.

Besides this being the 10-year anniversary of the NCCD program, several other milestones were reached in 2009. To date, 321,592 students have participated in CCD events since the program was initiated. North Carolina held its 25th event, joining New York (31) and South Dakota (32) as the only other states to hold at least 25. Eleven states have hosted at least 10 events. New Hampshire ran its first event, attracting 358 students from 22 schools.

More than ever, the NCCDC website serves as a source of information and a way for event organizers to submit and share images and stories of their success. A record number of articles and photos have been posted in 2009. The website is www.constructioncareerdays.us.

**Summer Transportation Institute**

During two 2-week nonresidential sessions at the University of Rhode Island, 38 middle school students learned about various modes of transportation, transportation careers and the respective education and training requirements.

Through classroom instruction, guest speakers, field trips and hands-on projects, the students interacted with transportation professionals and discovered what a career in the transportation field would entail.

Activities included:

- Introduction to bridges by a City of Providence engineer
- Re-designing an intersection
- Computer bridge building contest
- Balsa wood bridge building contest
- Safety session at the Historic Kingston Railway Station
- Equipment Technician Hunter Board Game
- Roadway map reading
- Subway map reading
- MBTA train trip to Boston
- Narrated trolley tour of Boston
- Tour of T.F. Green Airfield
- Hands-on activities at New England Laborer’s Training Center
- Boat tour of Narragansett Bay
- Writing thank you notes
- Keeping a daily journal of what was learned
- Daily discussion of transportation methods and careers

These activities were funded by the Rhode Island Department of Transportation and the Federal Highway Administration.

A student steers a boat on Narragansett Bay.
After conducting 51 workshops/classes for state and local transportation and public works officials in the first half of 2009, the RI T2 Center continued to offer a wide range of educational experiences in the second half of the year.

On Aug. 27, a survey was distributed to 297 public works and transportation employees, asking for their feedback on the type of trainings they would most like to see offered. More than 50 people responded to the survey. Classes held this fall reflect some of the needs that were expressed.

Here is a partial list of trainings held in recent months:
- Flagger Certification
- Controlling Construction Site Runoff
- Highway Program Financing
- Truck Driver Simulator Demo
- Preparing to Take the Hoisting License Exam
- Basic Relocation Under the Uniform Act
- Debris Management Planning
- All About Chain Saws
- Introduction to Powerpoint
- Intermediate Excel
- Intermediate Outlook
- Intermediate Word

The Outdoor Equipment Expo on June 24 was well attended. Photo by Neil Nachbar

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