PHEV Phase 1
Research Results Announced

On December 11, 2007, the UVM Transportation Research Center hosted a seminar to unveil the results of research on the capacity of Vermont’s electric grid to absorb 50,000, 100,000 and 200,000 Plug-in Hybrid Electric Vehicles.

This research estimated that the fuel costs for a plug-in hybrid running on electricity in Burlington would be approximately one-third of the cost of a comparable vehicle getting 25 mpg. Vermonters driving an average of 20,000 miles a year could save over $1,700 a year in energy cost—at December, ’07 prices.

The research was conducted by a team of TRC researchers led by Dr. Richard Watts and sponsored by the TRC and Central Vermont Public Service, Green Mountain Power Corporation and the Burlington Electric Department.

The seminar featured speakers Nancy Gioia, Director of Ford’s Sustainable Mobility Technologies and Hybrid Vehicle Program, John Hughes, UVM Provost and Vermont’s Secretary of Commerce and Community Development Kevin Dorn.

CVPS donates Plug-In Hybrid Electric Vehicle (PHEV) to TRC for Research

On February 21, 2008 Central Vermont Public Service Corporation (CVPS) donated a Plug-In Hybrid Electric Vehicle to the UVM Transportation Research Center. The Center will use this gift to expand and enrich our research on the next generation of transportation technology. This plug-in vehicle will be used in two UTC research projects.

First, this vehicle will be used to collect tailpipe emissions data using a Tailpipe Adaptor while people drive on the real road network. The research includes a unique UVM focus of on-board sensors, particle number emissions, low-cost sensors and public communication. This research includes faculty from Engineering, Sociology and The Community Development and Applied Economics Department (CDAE). The questions this research seeks to answer are:

1. How do hybrid versus non-hybrid vehicle emissions and performance differ in the winter and in hilly terrain?
2. How can emissions science be communicated to influence individual behavior and serve the public interest?

The second research project for this vehicle will be Phase Two of a research study conducted last fall by the UTC. The research was conducted by a team of UVM Transportation Center researchers led by Dr. Richard Watts and sponsored by the center and Central Vermont Public Service, Green Mountain Power Corporation and the Burlington Electric Department. These partners will join us for phase two where we will evaluate in more detail the capacity of Vermont’s electric grid to absorb 50,000, 100,000 and 200,000 Plug-in Hybrid Electric Vehicles simply by using unused electric capacity at night. People will drive by day and plug in at night. There are potential impacts for emissions, climate change, the electric grid, and consumers (including costs).

TRC Director Lisa Aultman-Hall, UVM President Dan Fogel and Vermont Governor James Douglas inspect the PHEV donated by CVPS.
UVM Honors College Interview

In the Winter ’08 issue, the Honors College e-Newsletter features an in-depth interview with four TRC faculty members, Drs. Britt Holmén, Adel Sadek, Lisa Aultman-Hall, and Richard Watts, who are team-teaching the seminar, Toward Sustainable Transportation: What Does the Future Look Like? Following is a brief excerpt from Bob Biral’s article, which can be read in its entirety at www.uvm.edu/~transctr

Bob Biral: What appealed to you about the Honors College to want to offer a course in the college?

Britt: It was the opportunity to work with outstanding undergraduate students of various majors on topics directly related to our combined transportation expertise. In addition, we looked forward to the opportunity to possibly attract undergraduate students to do research on transportation problems.

Adel: As Britt says, we were intrigued by the fact that we would have students from a wide range of academic backgrounds and disciplines in the class, and that was important to us.

BB: If we could, I’d like to turn to the content of your course. You say in your course description that while ‘local, regional and global transportation systems are vital to community, the economy, and economic development…’ you also say that ‘our current systems are not sustainable….’ Why not?

Lisa: Sustainability means sustainable in terms of the environment, social justice, and economy, whereas many people think sustainability is just about impact on the physical environment. As one example, our current auto dominated transportation system has a major impact on air and water quality. It separates people and decreases social interaction and social capital. It leaves those without resources for a car without adequate transportation. It limits the mobility of children and others who cannot drive. In terms of economics, our transportation system was built in the 1950s and 1960s with a 20-40 years design life. We now do not have the funding system in place to pay for the escalating costs of maintaining the system. And in real terms, the gas tax we use to fund the system is unsustainable as it is not indexed to inflation and not consistent with policies and programs that seek to reduce gasoline use and dependence on foreign oil.

Read the complete transcript online:
www.uvm.edu/~transctr
then click on “TRC Press Clips”.

Eno Transporation Foundation selects UVM Student to attend conference

The Eno Transportation Foundation has selected Jennifer Kenyon to participate in the 2008 Eno Leadership Development Conference in Washington, D.C. The conference will provide a first-hand look at how transportation policy is developed and implemented.

Ms. Kenyon is a graduate student with CDAE and is currently working on a UVM Transportation Research Center program through the Snelling Center for Government. Her research is looking at proposed transportation funding national practices and their impact in small, rural states.

Vermont Clean Cities Coalition

VCCC is an organization hosted by the TRC and is committed to advancing “the economic, environmental and energy security of the U.S.” through cutting back on “petroleum consumption in the transportation sector.” The VCCC held its first meeting of 2008 on Thursday, April 10 in the UVM Sugar Maple Ballroom at the Davis Center.

With over 30 people in attendance including stakeholders from organizations such as the American Lung Association, Chittenden County Metropolitan Planning Organization, and the Vermont Agency of Transportation, as well as students, professors and residents from throughout the state, the meeting outlined the past year’s success and the Coalition’s promising future.

Karen Glitman, the Vermont Clean Cities program coordinator, kicked the meeting off with National and Vermont Clean Cities trivia and handed out UVM Transportation Research Center hats as prizes. Dr. Britt Holmén, UVM professor of Engineering, offered a very compelling presentation on idling and the threat of particulate emissions from vehicles. The meeting adjourned with group feedback on positive steps for the future and suggestions on how the state may create policies for idling and vehicle emissions.

For more information on VCCC, please visit www.uvm.edu/~cleancty/ or contact Tristam Coffin at tcoffin@uvm.edu or (802) 656-9864.

Rebecca Towne of Green Mountain Power chats with Netaka White, the Executive Director of the VT Biofuels Association, at a recent TRC-sponsored meeting of the Vermont Clean Cities Coalition.
Meet the TRC’s Newest Staff Members

DEBRA KOBUS
Business Manager

Debra Kobus was hired as the Business Manager of the Transportation Research Center on January 22, 2008 to manage Human Resources as well as TRC’s grant awards and budgets. Ms. Kobus came from UVM’s Grant and Contract Administrative Services Department where she worked as a Grant Specialist. Previous to that, she was employed as the Business Manager at UVM’s Center on Disability and Community Inclusion. She came to the TRC with over 12 years of grant management experience and a total of 20 years working in higher education. Ms. Kobus has a Bachelor of Science Degree in Business.

You can reach Debra at Debra.Kobus@uvm.edu or (802) 656-9123.

GOPAL PATIL
Research Engineer


Q: What has been your work experience prior to coming to the TRC?
A: I’ve done material controls at Pratt & Whitney, been second in command (engineer) on boats similar to the Spirit of Ethan Allen, quality control during a GIS project to model the electric distribution system, supervisor of lift operations at Mt Snow, narrator of technical textbooks for blind students, and some hydropower maintenance, design, and permitting work.

Q: Why do you do the work you do?
A: Transportation is not only the largest contributor to climate change in Vermont, but it’s dangerous and socially isolating (the type of transit that most people use that is) and it needs to change!

You can reach Gopal at Gopal.Patil@uvm.edu or (802) 656-8567.

New Grants Awarded for 2008-2009

Based on the results of an outside peer review process, the subsequent ranking by a subset of our external advisory committee and approval by the Provost we are pleased to announce the following six proposals for funding:

- Modeling Plug-In Hybrid Electric Vehicle Impacts in Vermont from Empirical Vehicle/User Data (Dr. Paul Hines, School of Engineering, CEMS & Dr. Richard Watts, UVM Transportation Center. Match provided by CVPS, GMP and BED)
- Atmospheric Oxidative Chemistry of Organic Particulate Emissions from Fuel Combustion (Dr. Giuseppe Petrucci, CAS)
- Optimal Design for Porous Concrete Pavement (Dr. George Pinder, School of Engineering, CEMS)
- Designing Sustainable Porous Pavements for Northern Communities (Dr. Mandar Dewoolkar, School of Engineering, CEMS)
- Facilitation of Behavior-Based Efficiency Opportunities in Vehicular Operations Through Retrofit Information Feedback Systems (Dr. Laura Solomon, College of Medicine)
- The Elements and Outcomes of Varying Financing Scenarios on the Overall Cost of Transportation Capital Programs (Dr. Richard Sicotte, CAS & Karen Glitman, UVM Transportation Center)

This was an extremely competitive process with a number of strong interdisciplinary proposals. $250,000 was made available for this round of grants. We received letters of intent for projects totaling over $460,000.

Funding these research projects and publishing the results should lead to additional transportation research at UVM. We expect research growth and a larger payback to UVM through graduate research growth (including external funding) as a result of awarding these grants. These proposals were ranked based on their intellectual merit, broad impacts, overall rating and consistency with the UVM Transportation Center themes. For more information, contact Richard Watts at richard.watts@uvm.edu or 656-9775.
TRC Awarded $1 Million for Workforce Development Project

The U.S. Department of Transportation announced that the TRC has been awarded $979,829 as part of a $1.01 million workforce development project to help develop innovative programs to attract and retain skilled workers in the transportation sector of Vermont, New Hampshire and Maine.

“The transportation industry is a major economic sector,” said UVM President Don Fogel, “and keeping it vibrant is critical to Vermont’s economy and our quality of life. The Transportation Research Center and its partners on this workforce development grant are an excellent example of how UVM can partner with communities to advance Vermont and New England.”

To construct and implement this program, the TRC is partnering with the Vermont Agency of Transportation, Vermont Technical College, AARP-Vermont, the New Hampshire Department of Transportation, the Maine Department of Transportation, Vermont Local Roads, and The University of New Hampshire-Local Technical Assistance Program.

The four new programs will tackle a host of issues including the need to recruit transportation professionals with interdisciplinary skill sets (e.g. environmental engineering, intelligent technology, energy, public involvement, and innovative financing). While these diverse needs may challenge some with traditional road construction or traffic expertise, this newer approach creates an exciting challenge that can be used to recruit new talent and to retain existing workers.

Also to be addressed is the challenge of recruiting and training skilled maintenance workers, at times a difficult task in northern New England’s rural landscape.

And finally, the grant will fund a program that focuses on the statistics of our aging population by seeking to recruit and train the state’s growing number of retirees. Demographics—particularly in New England—point to the need to make better use of the skills and talents of retirees, from both inside and outside the transportation sector.

“Like all industries, transportation has seen an evolution of skills needed to meet the demands of the 21st century,” explains Director Lisa Aultman-Hall. “However, transportation plays such an integral role in our community and economy and we expect these new programs to be very successful in attracting new talent to work on the complex challenges of the system.

“The programs are especially designed to address the needs related to finance, energy and environment,” Aultman-Hall said. “We are very pleased to have Karen Glitman, former Vermont Deputy Secretary of Transportation as the program manager for this grant. Her interdisciplinary background and approach is well suited to this challenge.”

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