Student Ruth Willis

Spotlight on TRC Graduate

We checked in with TRC grad student Ruth Willis, UVM School of Nursing (Advisors, Nancy Morris and Ben Littenberg), whose research is titled: “Transportation Access as a Determinant for Care in Patients with Diabetes in Vermont”

Q - What is your project about?
A - Diabetes is a disease that affects your ability to metabolize carbohydrates or sugar in your diet. It increases your risks for heart disease and stroke. The objective of this study is to determine the relationship between the management of diabetes and several transportation markers. Using data from the Vermont Diabetes Information System (VDIS), I am asking answering the following questions:

• Does access to sidewalks, as measured by having a sidewalk in front of their house, improve health outcome?
• Is there a relationship between the type of road or road network someone lives on and their engagement in diabetes care?
• What draws you to do this research?
A - Research has been completed linking physical activity levels to blood glucose control. Other researchers have found relationships between physical activity levels and the built environment. Other research with obesity and heart disease indicate measures of the built environment (side-walks), however, have not been made. Since increased physical activity has been shown to result in improved blood glucose control for people with diabetes, establishing a connection between the built environment and blood glucose control would add to the literature supporting the management of diabetes.

Additionally, as the study participants are located in Vermont and adjacent states, the results of this work may be applicable to northern areas and can be used to support public health and community managers in advocating for improved walking environments.

UVM transportation students present final papers

Twelve UVM graduate students complet-ed the TRC-sponsored course on “Critical Issues in Transportation” in December 2008, collaborating in inter-disciplinary groups on four final research papers:

• Low-income Inner City Residents investigates the critical transportation issues facing low-income urban citizens, including job access, vehicle ownership, and social justice (equity, emissions, and health).

• Funding and Equity Issues for Rural Transit Systems – investigates the challenges for residents in rural areas and their ability to access reliable and convenient transit options.

• Critical Transportation Issues for Older Adults – investigates decreased mobility caused by cessation of driving, licensing restrictions, safety issues, and the increased transportation costs for citizens with fixed-incomes.

• Does access to sidewalks, as measured by having a sidewalk in front of their house, improve health outcome?

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With fewer people to help pay the cost of maintaining the transportation infrastructure in rural areas, rural states are struggling to raise enough revenue within their own borders to keep these critical links in our nation’s transportation system functioning as a seamless network. The national dialogue about new sources of revenue to replace the declining effectiveness of the gas tax has been focused on congestion pricing, tolling and public/private partnerships. None of these sources of revenue have much applicability in rural areas. Common messages were heard throughout the session, both in the formal presentations and during the question and discussion periods. They were both explicit and implicit in nature:

• The federal government is a critical leader in addressing the future transportation system of the nation.

• A new national vision for a transportation system aimed at ensuring mobility, optimizing system performance through the use of communications technology, and providing options to the single occupancy motorized vehicle could benefit rural areas.

Rural transportation funding summit brings law-makers and transportation experts together

Upcoming TRC Events:

2nd Annual TRC Research Expo
Wednesday, May 6/09 - 2:30 to 4:00 p.m.
Davis Center, in the Silver Maple Ball-room. The event is open to all UVM faculty, staff, students & community members to attend. For more information, please visit www.uvm.edu/transportationcenter.

The Case for Natural Gas Vehicles
Wednesday, May 27/09

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TRC Student receives the Edith D. Hendley Award

Cassandra Gekas, pictured left with Edith Hendley, is a transportation graduate scholar and a student in UVM’s Community Development and Applied Economics department, was awarded the Edith D. Hendley Award from the UVM Women’s Center at the Women’s Awards Banquet on March 23, 2009. Cassandra’s work at the TRC focuses on the “Demographics of Transportation in the Two-Rivers Area (TransSystems)” and “Measuring the Effect of Passengers on Safety of Older Drivers”. Congratulations, Cassandra!

TRC Research presented at the 88th TRB Annual Meeting

The Transportation Research Board’s Annual Meeting in Washington, D.C. is the largest annual gathering of transportation officials, with more than 3,000 presentations in nearly 600 sessions. The spotlight theme for 2009 was “Transportation, Energy, and Climate Change.” TRC graduate students, associated faculty, and staff presented the following projects at meeting:

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Chen Zhang (TRC Research Engineer) A New Way to Estimate Crash Exposure
Karen Gittman (TRC Program Manager) Increasing Diversity through Partnerships for a Summer Trans. Institute
Eric Jackson and Britt Holmen (TRC associated faculty) Modal Analysis of Vehicle Operation and Particulate Emissions from Connector Transit Buses
Richard Watts (TRC Research Director), Steven Letendre Effects of Plug-in Hybrid Electric Vehicles on the VT Electric Transmission System
Eric Roche (TRC graduate student), June M. Kolodzey (TRC associated faculty), Lisa Aultman-Hall (TRC Director) Estimation of the Inelasticity of Incentive Demand for Non-motorized Commuting
Jim Sullivan (TRC graduate student), Lisa Aultman-Hall (TRC Director), David Novak (TRC associated faculty), Darren M. Scott Investigation of Link Capacity-Disruption in the Calculation of a Transportation Network Robustness Index
Erica K. Campbell (TRC graduate student), Qingbin Wang Pupil Transportation: Factors Affecting Mode Choice and the Amount of Parent-driven Trips to School
Norhan Belz (TRC graduate student), Per E. Gränder Maine Statewide Deployment and Integration of Advanced Traveler Information Systems
Brian Voigt, Brian Miles, Alexandra Reiss (TRC graduate students), Austin Troy (TRC associated faculty) Testing an Integrated Land-use and Transportation Modeling Framework for a Small Metropolitan Area
George McCon (TRC graduate student) and Mandir DevVeer (TRC associated faculty) Strength and Permeability Characteristics of Porous Concrete Pavements
Stephen Lawe, John Lobb, Adel W. Sadek, Shan Huang TRANSIMS Implementation in Chittenden County, Vermont: Development, Calibration and Preliminary Sensitivity Analysis

TRC researchers submit study to state legislators on “Transportation Efficiency”

In the last decade significant advances have been made in the efficiency of the electric energy sector, especially in Vermont. However, inefficiencies in our transportation systems are only now starting to be addressed. The connection between transportation energy use and greenhouse gas (GHG) emissions is critical. While contributing only about a quarter of GHG nationwide, in Vermont transportation accounts for 42 percent of our GHG. This relative pattern is true in other rural places.

Typically, there are three categories of strategies on how to reduce energy use and GHG emissions in transportation sector – most notably promoted by the State of California:

1. Vehicle efficiency (mpg)
2. Lower carbon fuels – lifecycle GHG per unit energy
3. Reduce miles traveled – how often and how far we travel and how we do it (walk versus car, carpool versus drive alone)

Inherent in their order and the focus on vehicles and fuel is society’s optimistic assumption that science and technology can save us from the transportation and GHG situation. But changing behavior through the reduction of miles traveled and how we drive (speeds and accelerations) will also be necessary. We are less sure how to do this, especially in rural areas. Our report shows that Vermonters are slowly buying more fuel efficient vehicles. But we have only scratched the surface of reducing energy use and GHG emissions in transportation while ensuring mobility and quality of life.

VTrans contracted with the UVM Transportation Research Center to examine transportation system efficiency trends in Vermont and to provide a list of strategies that might encourage increased transportation system efficiency.

Lead researcher Dr. Richard Watts notes that significant obstacles to increasing transportation efficiency in Vermont are the state’s dispersed settlement patterns, automobile dependency and our aging population.

The report can be downloaded in its entirety at the TRC website. Visit www.uvm.edu/transportation.

TRC hosts Burack Distinguished Lecturer

On Thursday, January 15th, 2009, transportation expert Dr. Daniel Sperling spoke about the rapidly increasing number of automobiles and their environmental impact. The event was a Dan & Carole Burack President’s Distinguished Lecture and drew a standing-room-only audience of more than 160 people to the Livak Ballroom at UVM’s Davis Center.

Dr. Sperling is a Board member on the California Air Resources Board; author of “Two Billion Cars: Driving Toward Sustainability”; Director of the Institute of Transportation Studies; Acting Director of the Energy Efficiency Center; and Professor of Civil & Environmental Engineering and Environmental Science & Policy at UC Davis.

To view a DVD of the lecture, contact the UVM Media Resources Department, in Bailey/Howe Library, at (802) 656-1947.

UTCM Student of the Year: James Sullivan

Pictured above, from left: Paul Brubaker, Administrator, US DOT, Research and Innovative Technology Administration (RITA); the Honorable Norman Y. Mineta, Former Secretary, US DOT; Dr. Randy Machemehl, Current President of the University of California Transportation Centers (UCUT); and Director of the University of Texas-Austin Transportation Center; and James Sullivan (TRC graduate student) who was honored as the TRC Outstanding Student of the Year at the Council of University Transportation Centers Eleventh Anniversary Annual Awards Banquet held during TRB week.

TRC Seminar with Jill Hough, Ph.D.

Dr. Hough visited Vermont to share her research regarding elderly mobility in rural areas. Her presentation, “Aging in Rural and Small Urban Environments: Are Travel Needs Being Met?”, can be downloaded from the TRC website at www.uvm.edu/transportation. Dr. Hough is the director of Upper Great Plains Transportation Institute’s Small Urban & Rural Transit Center (SURTC), which focuses on research, education, and training for the public transportation industry.
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- Does access to sidewalks, as measured by having a sidewalk in front of their house, improve health outcomes?
- Is there a relationship between the type of road or road network someone lives on and their engagement in diabetes care?

Q - What draws you to do this research?

A - I am particularly interested in the relationship between walkable communities (as measured by sidewalks) and the management of diabetes (as measured by blood glucose levels in patients). This is important to me as I have an interest in public health. Creating research that can be used to support policies related to community growth and investment in infrastructures, such as sidewalks, gives my work broader impact.

Q - Why is this research so important?

A - Research has been completed linking physical activity levels to blood glucose control. Other researchers have found relationships between physical activity and the built environment. Other research with obesity and heart disease indicate the links between blood glucose control and the built environment. Other research is important to me as I have an interest in public health. Creating research that can be used to support policies related to community growth and investment in infrastructures, such as sidewalks, gives my work broader impact.

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- Critical Issues in the Trucking Industry: Reducing Emissions and Fuel Consumption through Anti-idling Measures – investigates ways the industry can reduce idling and potentially save on fuel costs while cutting greenhouse gas emissions. The TRC grad students are from the Colleges of Engineering and Mathematical Sciences, Agriculture and Life Sciences, and the Rubenstein School of Environment and Natural Resources.