

A photograph of two cyclists riding on a paved path. The cyclist on the left is wearing a red and black jacket and a white helmet. The cyclist on the right is wearing a light blue and black jacket and a black helmet. In the background, there is a body of water and a white lighthouse on a rocky island. The sky is overcast.

UNIVERSITY OF VERMONT  
TRANSPORTATION RESEARCH CENTER

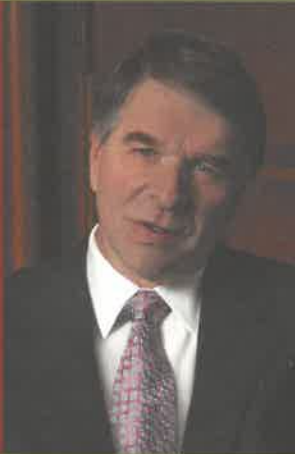
RESEARCH - EDUCATION - OUTREACH

ANNUAL REPORT | 2007-2008

# TRANSPORTATION RESEARCH CENTER



The mission of the UVM Transportation Research Center is to conduct innovative interdisciplinary research, education and outreach programs that advance sustainable transportation systems.



“The transportation industry is a major economic sector, and keeping it vibrant is critical to Vermont’s economy and our quality of life. The Transportation Research Center provides an excellent example of how UVM can partner with communities to advance Vermont and New England.”

– Daniel Fogel  
UVM President

Glossary of acronyms used in this report:

CAS - College of Arts & Sciences  
CCMPO - Chittenden County Metropolitan Planning Organization  
CCRPC - Chittenden County Regional Planning Commission  
CDAE - Community Development and Applied Economics  
CEMS - College of Engineering and Mathematical Sciences  
COM - College of Medicine  
NETC - New England Transportation Consortium  
NETI - New England Transportation Institute  
OSP - Office of Sponsored Programs  
PHEV - Plug-in Hybrid Electric Vehicle  
RITA - Research and Innovative Technology Administration  
RPC - Regional Planning Commission  
RSENR - Rubenstein School of Environment and Natural Resources  
RSG - Resource Systems Group, Inc.  
TRC - Transportation Research Center  
US DOT - United States Department of Transportation  
UTC - University Transportation Center  
UVM - University of Vermont  
VTrans - Vermont Agency of Transportation



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## Message from the Director

This past year was filled with tremendous growth at the UVM Transportation Research Center. It has been a privilege to host hundreds of individuals at our events and to work with so many different groups both within Vermont and beyond our borders.

In the fall of '07, Dr. Richard Watts and I taught our second offering of our new transdisciplinary course, *Critical Issues for Transportation in the 21<sup>st</sup> Century*, to 23 graduate students enrolled in five different Colleges. By spring of '08, one of these students who had not directly majored in transportation had accepted a position with a leading transportation consulting firm, establishing that our university research and education programs are indeed attracting new talent to professional service in the transportation sector. Coincidentally, in April the outreach team at our center was awarded a large competitive grant to focus on workforce development for the transportation sector in northern New England.

The Center's research capacity has grown this past year with large increases in staff, graduate students and equipment. We've received the donation of a plug-in hybrid electric vehicle for field studies and equipment for the Transportation Air Quality Lab, both of which have created significant excitement.

Within the transdisciplinary research teams that we've built, new relationships have been sparked and existing ones have deepened. In March, these teams

joined me to present our strategic vision and interim results to the US DOT during their site visit to Burlington. The visitors were impressed by our collaboration and invited me to present our "Signature Research Project" process to a national gathering of University Transportation Centers in San Jose, California in June, '08.

Our external partnerships have also grown this past year, resulting in new grants and awards related to the energy and environmental aspects of transportation. Of equal importance is the recognition of our unique role as a university-based Center to the increasingly significant issue of sustainable transportation. Our work on the complex interconnections between community, mobility, public health, energy and environment is certainly timely.

While 2007-2008 consisted of building and growth, we are looking ahead to a year of research results. These results will no doubt enrich the ongoing conversation we share with you on how to develop a sustainable transportation system for our communities, both local and global.

Sincerely,

Lisa Aultman-Hall  
Director, UVM TRC



# TRANSPORTATION + ENERGY

**M**obility requires energy, but not all energy sources are created equal in terms of social, environmental and financial costs. The complex questions regarding future transportation energy use require bridges across disciplines that bring researchers, educators and students together. In Vermont, transportation produces 44% of the state's greenhouse gas emissions.



TRC's Lisa Aultman-Hall, UVM President Dan Fogel and VT Governor James Douglas inspect the PHEV donated by CVPS.

## RESEARCH PROJECT:

### Modeling Plug-In Hybrid Electric Vehicle Impacts

On February 21, UVM received a new PHEV—a modified Toyota Prius donated by Central Vermont Public Service (CVPS)—which TRC researchers are using to explore how a new generation of hybrid cars, which recharge from a standard electric outlet, perform in the cold, hilly conditions of Vermont.

Bob Young, president of CVPS, presented the vehicle to UVM's President Dan Fogel and TRC director Lisa Aultman-Hall, as part of CVPS's Plug 'n Go™ program. PHEV's can reduce driving costs and air pollution by substituting off-peak electricity for gasoline.

In this study, funded by the US DOT and Vermont



PHEV researchers: Damon Lane, Paul Hines & Richard Watts

Utilities, volunteer drivers will use the PHEV for their regular daily travel, and from these trips, data will be collected about carbon emissions, electricity use, local variations in the electrical supply, and performance over differing distances and driving styles. The research also includes an on-going effort to determine the capacity of Vermont's electric grid to handle 50,000, 100,000 or 200,000 plug-in hybrids.

"The first phase of this work," said Dr. Richard Watts, Principal Investigator, "indicates that the Vermont electric grid could handle 200,000 PHEVs charged at night under direct utility control."

#### OUTREACH PROGRAM: Vermont Clean Cities Coalition

The mission of the Clean Cities program is to advance the economic, environmental and energy security of the U.S. by supporting local decisions to adopt practices that contribute to reduced petroleum consumption in the transportation sector.

The state of Vermont initiated its Clean Cities program in 2001 and on July 1, 2007, the UVM TRC became host for the Coalition. Since then, the Vermont Clean Cities Coalition has sponsored or co-sponsored the following events:

- Public Transit Roundtable (September 2007)
- Biodiesel Workshop (October 2007)
- Annual Stakeholders Meeting (April 2008)
- Vermont Clean Car Show (April 2008)

Other Clean Cities activities include publishing a twice monthly e-newsletter, writing grant proposals, producing the annual "Vermont Transportation

Energy Report," maintaining databases and providing representation to the federal Clean Cities program of the US Department of Energy. More information about the program can be found online at [www.uvm.edu/~cleancty](http://www.uvm.edu/~cleancty).

#### STUDENT PROJECT: Mapping Policy Drivers: Discourse Networks in the Formation of Vermont's Transportation Energy Policy - Elaine Wang, Master's Degree Candidate, RSENR

Transportation accounts for about a third of the energy that Vermonters use, more than any other sector. Most of this transportation energy relies on out-of-state petroleum, the use of which generates an array of policy issues.



Elaine Wang

A comparative case study approach was used to examine how Vermont policy makers frame the issue. Data sources included surveys, interviews, participant observation, and documents. Analysis concentrated on points of divergence and convergence within and between policy makers. The study also provided recommendations as to how

gaps in understanding may be remedied to improve transportation energy policy for environmental sustainability.

#### OTHER PROJECTS OF NOTE: (Funded by US DOT)

Multi-Scale Model of the U.S. Transportation Energy Market for Policy Assessment - Drs. Margaret Eppstein, Jeff Marshall, and Donna Rizzo, CEMS

Mechanical and Economic Performance of an Electric Car Utilizing the Zebra Battery Technology in Vermont - Dr. Walter Varhue, CEMS

Estimating An Incentive Elasticity of Demand for Non-motorized Transportation - Dr. Jane Kolodinsky, CDAE

Carbon Life-cycle Analysis of Organic Versus Conventional Biofuel Crop Production for Canola and Sunflower Crops Grown in the Northeast - Eleanor Campbell, Master's Degree Candidate, RSENR

Industry-Partnered Senior Design Projects on Alternative Energy - Dr. Michael Rosen, CEMS

Facilitation of Behavior-Based Efficiency Opportunities in Vehicular Operations Through Retrofit Information Feedback Systems - Dr. Laura Solomon, Department of Psychology



# TRANSPORTATION + ENVIRONMENT

**T**ransportation networks and vehicles have a profound impact on the air, water and land systems. Yet, we lack complete information upon which to pursue best practices for programs and policies to minimize or eliminate these effects. University research is critical to filling these knowledge gaps.



## THE SIGNATURE PROJECT #3 Emissions & Performance of Alternative Vehicles in Northern Climates

The focus of this US DOT-funded project, led by Dr. Britt Holmén, is to quantify “real-world” emissions from hybrid versus non-hybrid vehicles. State-of-the-art micro-simulation models can replicate vehicle activity, fuel economy and emissions. Unfortunately, the factors used by such models are often based on data from laboratory tests conducted under ideal conditions. Existing emissions databases do not account for factors such as road grade and temperature. This project will collect tailpipe emissions data—including ultrafine particles (which pose a public health concern), carbon dioxide gas, and other air toxins—using on-board sampling while people drive on the real road network.



Dr. Holmén explains the tailpipe adapter used to gather emissions data to a student.

The second part of this project focuses on public understanding of emissions. The project's behavioral scientists from CDAE and Sociology will first create a baseline defining public knowledge of tailpipe emissions, and then they will develop communication strategies to affect behavior related to vehicle emissions.

Partners: Vermont Agency of Natural Resources, Resource Systems Group (RSG), Inc., Udall Foundation, UVM Parking and Transportation



Students in the Summer Transportation Institute explore the properties of porous pavement materials.

### RESEARCH PROJECT: Designing Sustainable Porous Pavements for Northern Communities

Stormwater runoff from traditional, non-porous pavement systems—including parking lots—significantly pollutes our rivers, lakes, and estuaries. Alternative porous pavement systems allow polluted water to pass through into the natural sub-base thereby reducing the quantity of stormwater and potentially improving water quality.

This UVM research project, led by CEMS faculty Drs. Dewoolkar and Pinder and funded by VTrans and US DOT, is characterizing the suitability of porous concrete pavements for northern communities. Research

focuses on an instrumented park and ride facility built by VTrans. In addition to the basic mix design, of particular interest are the effects of factors such as freeze-thaw, wear and tear, and winter maintenance on the system properties. These determinations can then lead to development of more appropriate mix design specifications for our region. A numerical model for the overall system (pavement, sub-grade and sub-base) will be developed and will allow results to be transferred to other locations.

### TRC SIGNATURE PROJECT #1: Integrated Land-Use, Transportation and Environmental Modeling

Travel patterns such as the distances we drive are directly related to the arrangement of land uses and activities where we live. Yet the models traditionally used in transportation planning simply assume a set arrangement of land use, neglecting the interactions between development patterns and travel. For example, building a road facilitates land development, which creates traffic and the congestion, in turn, might cause officials to expand the road or travelers to choose other destinations.

To capture the complex interactions of multiple players within the regional transportation-land use system, UVM researchers are using advanced computing to integrate several models which had typically been used separately (UrbanSIM, TRANSIM, activity models, traffic simulation models and demand forecasting models).

The research team is also developing metrics for the impacts of land use and transportation on stormwater, roadside plants, network robustness, greenhouse gas emissions, air toxics, and airborne ultrafine particles.

Most of the researchers working on metric development are new to transportation and are guided by experienced modelers Drs. Austin Troy (RSENR) and Adel Sadek (CEMS). The project is funded by the US DOT.

Partners: RSG, CCMPO, CCRPC, and McMaster University



### OTHER PROJECTS OF NOTE:

(Unless otherwise noted, funded by US DOT.)

Atmospheric Oxidative Chemistry of Organic Particulate Emissions from Fuel Combustion - Dr. Giuseppe Petrucci, Department of Chemistry

Integrating Ecosystem Service Impact Assessment into an Integrated Land Use/Transportation Modeling Framework - Ken Bagstad, Ph.D. Candidate, RSENR

Implementation and Architecture Development of a Combined Land Use & Transportation Model for Chittenden County, VT - Brian Voigt, Ph.D. Candidate, RSENR

Development of an Architecture for Generating Environmental Outputs from an Integrated Land Use and Transportation Model - Galen Wilkerson, Master's Degree Candidate, RSENR

A Land Use-Based County-Level Carbon Budget for Chittenden County, Vermont - Erin Quigley, Master's Degree Candidate, RSENR

Characterizing Older Driver Behavior for Traffic Simulation and Emissions Modeling - Dr. Lisa Aultman-Hall, TRC; Funded by NEUTC at MIT

# VITAL COMMUNITIES

**T**ransportation and mobility contribute greatly to our quality of life. Through our research, we are looking to define elements that encourage, support, and enable increased vitality in our communities. The efficient movement of people and goods is critical to a vibrant and predictable economy. Our lives can be better if we are physically active and healthy, if we are connected to our neighbors, and if we have safe and convenient options for travel.



As part of Signature Project #4, VTrans' Amy Bell and TRC's Damon Lane set up a pedestrian counter in Montpelier, Vermont.

## TRC SIGNATURE PROJECT #4: Seasonal and Built Environment Impacts of Mobility

The climate and development patterns of rural northern communities make mobility particularly challenging and often cost prohibitive. This project, led by Drs. Jane Kolodinsky (CDAE) and Brian Flynn (COM), focuses on how weather impacts three aspects of mobility: un-served travel demand, bicycle travel and pedestrian transportation.

First, in partnership with the New England Transportation Institute (NETI), using new survey data and existing Center for Rural Studies (CRS) built environment data, team members are measuring and describing the effects of weather on both revealed and un-served travel demand in rural northern communities.

Focus groups and surveys are measuring the seasonal variation in bicycle travel demand as well as the associated causes of this variation in order to recommend policies and programs that might promote year-round use. A continuing analysis of pedestrian volume data has already indicated that weather can account for 30% of volume variation. The Project is funded by US DOT.

Partners: VTrans, NETI and RSG, Inc.



## OUTREACH PROJECT:

### Transportation Workforce Development

A new four-year workforce development project, funded by a grant from the US DOT, will help develop innovative programs to attract and retain skilled workers in the transportation sectors of Vermont, New Hampshire and Maine.

Given northern New England's demographic changes and the turbulent nature of our 21<sup>st</sup> century transportation system, the transportation sector will require a comprehensive workforce development plan. The TRC will create four new programs to help transportation leaders attract and maintain workers in this challenging environment.

1. **The Transportation Systems Institute** will focus on maintaining or recruiting new talent to the DOT workforce in the three northern New England states.
2. **The Second Careers in Transportation Program** will focus on attracting retirees from other industries to bring their skills to bear on the 21<sup>st</sup> century challenges in transportation.
3. **The Transportation Systems Academy** will provide hands-on training for transportation industry jobs to students at technical high schools or within state corrections systems.
4. **A National Transportation and Community College Summit** will enable facilitated discussions to create an action blueprint for enhancing the role of community colleges in all types of transportation workforce development.

## TRC SIGNATURE PROJECT #3:

### Sustainable Transportation for Tourism

Transportation engineers often study patterns for routine daily travel: to work, to school, for social activities and errands. In this project, funded by US DOT, an experienced interdisciplinary team, led by Dr. Robert Manning (RSENR), tackles the issue of sustainable transportation in the context of tourism. They propose a model built on a matrix-based approach to define varying levels of sustainability where "indicators" are organized into a three-fold framework of environmental, social, and economic considerations. A range of "standards" for these indicators is arrayed across the matrix. Researchers are focusing on three types of geography where tourism travel is significant: tourist towns, scenic corridors and national parks. By incorporating indicators and standards a Level of Service (LOS) style metric can be extended to tourist travel.

Researchers are also considering marketing aspects of tourist travel behavior. Provision of more sustainable transportation such as a certified Green Coach is hypothesized to not only affect tourist travel decisions but to also provide public education and community/economic development.



## OTHER PROJECTS OF NOTE:

(Unless otherwise noted, funded by US DOT.)

Application of The Network Robustness Index to Identify Critical Road Network Links - Drs. David Novak and Lisa Aultman-Hall, School of Business Administration and School of Engineering

Pupil Transportation: Travel Behavior, Traffic Impacts and Potentials For Improvement - Dr. Qingbin Wang, CDAE

Measuring the Effect of Passengers on the Safety of Older Drivers - Dr. Lisa Aultman-Hall; Funding Agency: New England UTC at MIT

Using a Regional Microscopic Simulation Model to Evaluate Potential Work Zone Control Strategies - Drs. Sadek, Patil and Watts; Funding Agency: VTrans

Scenario Land Use and Transportation Modeling for Community Engagement and Understanding at Regional and Local Scales of Governance - Alexandra (Lexie) Reiss, Master's Degree Candidate, RSENR

Staple Foods and Transportation: An Institutional Analysis of Local Versus Conventional Supply Chains on Carbon Emissions - Alek Antczak, Master's Degree Candidate, RSENR

Access to Health Care: Does Transportation Play a Role? - Jane Roodenburg, Master's Degree Candidate, School of Nursing

Multiple Model Framework of Extended Kalman Filtering for Predicting Vehicle Location Using Latest Global Positioning System - Cesar Barrios, Master's Degree Candidate, CEMS

Intelligent Traffic Signals: Extending the Range of Self-Organization in Models - Dan Brown, Master's Degree Candidate, Dept. of Mathematics and Statistics

Transportation Equity and Communities at Risk: Refugee Populations and Transport - Dr. Pablo Bose, Department of Geography

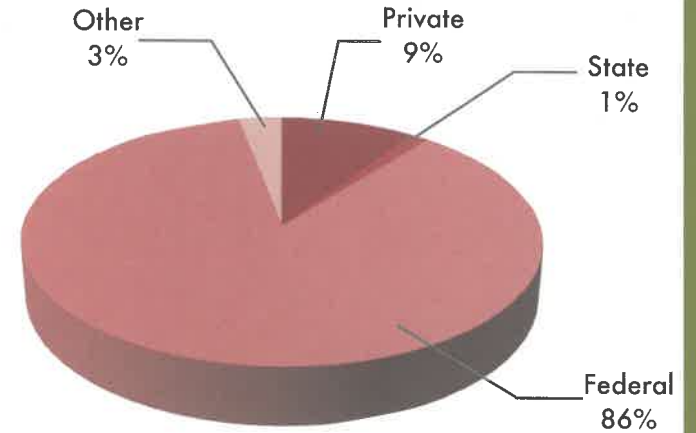
Summer Transportation Institute - Karen Glitman, TRC; Funding Agency: VTrans & FHWA

Demographics of Transportation in the Two Rivers Area - Dr. Richard Watts; Funding Agency: Two Rivers RPC

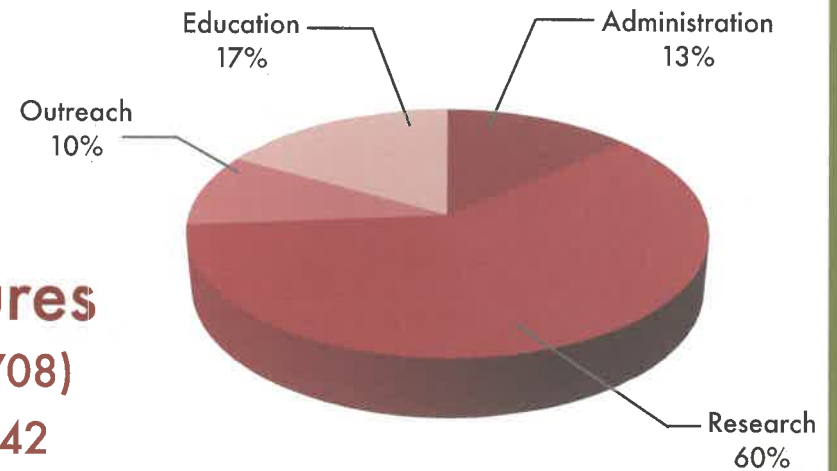
Transportation Impacts of Transit-oriented Development in Rural Towns - Dr. Watts; Funding Agency: ME DOT



External  
**Funding**  
by source (FY08)



**Expenditures**  
by category (FY08)  
Total: \$2,650,042



# GRADUATE & UNDERGRADUATE STUDIES



The UVM TRC brings together graduate students from across campus to study and research different aspects of the transportation system and its impacts. In problem-based courses, students consider critical issues for transportation in the 21<sup>st</sup> century and move away from the engineering-dominated transportation focus of the Interstate era. These new generation professionals are from science, engineering, health and social science backgrounds. The transdisciplinary struggles these students and their faculty face in the classroom reflect those now present in our transitioning transportation agencies and firms.

A new course in transportation air quality has been established and taught twice by Dr. Britt Holmén. In 2008 Dr. Holmén presented the course 100% on-line and will expand this opportunity beyond UVM in future years. The course emphasizes the need to integrate the modeling approaches of traffic engineering and environmental engineering.

The Honors College was established in 2004 at UVM to serve outstanding students in a learning-residency environment. In spring 2008, an interdisciplinary team of faculty offered the first case-based course for Honors students on sustainable transportation. The course focused on students determining if the decision to build a controversial regional freeway was an advance or failure in terms of sustainable transportation.

**Find out more! Go to [www.uvm.edu/transportationcenter](http://www.uvm.edu/transportationcenter) and click on "Graduate Studies"**

TRC Associated Graduate Students (L to R): Jennifer Kenyan (Master's in Public Administration), James Sullivan (CEMS), N. Tucker Stevens (CEMS), Joseph Bartlett (RSENR), Elaine Wang (RSENR), Eleanor Campbell (RSENR), Shan Huang (CEMS), Alexandra Reiss (RSENR)



# FACULTY & STAFF



## TRC Staff (left to right)

Gopal Patil, Postdoctoral Researcher  
Kim Mercer, Communications Coordinator  
Debra Kobus, Business Manager  
Richard Watts, Research Director  
Lisa Aultman-Hall, Director and Professor,  
School of Engineering and CDAE  
Karen Glitman, Program Director  
Julia Kirby, Office Assistant  
Damon Lane, Research Engineer

## External Board of Advisors

Teresa Adams - University of Wisconsin-Madison  
Thomas Adler - Resource Systems Group, Inc.  
William Ahearn - Vermont Agency of Transportation  
Ernie Blais - US DOT FHWA Vermont  
Dan Brand - CRA International  
Cindy Burbank - Parsons Brinckerhoff  
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Katherine Decarreau - University of Vermont  
Michael Demetsky - University of Virginia  
Lawrence Dwyer - US DOT FHWA Vermont  
Harold Garabedian - Vermont Agency of Natural Resources  
Steve Hackett - Hackett, Valine & MacDonald, Inc  
Susan Handy - University of California-Davis  
Leon W. Heyward - NYC Department of Transportation  
Jose Holguin-Veras - Rensselaer Polytechnic Institute  
Scott Johnstone - Chittenden County MPO  
John Kassel - Shems Dunkiel Kassel & Saunders PLLC  
Charles Luce - USDA Forest Service  
James Mahoney - University of Connecticut  
Matt Mann - Windham Regional Planning Commission  
Glenn McRae - Snelling Center for Government  
Kevin Moore - Bently Systems Inc.  
Elaine Murakami - US DOT FHWA Office of Planning  
Errol Noel - Howard University  
Robert Penniman - Campus Area Transportation Management Association  
Peter Plumeau - Resource Systems Group, Inc.  
Kathleen Ross - LaSalle Bank Surface Transportation  
Brian Searles - Burlington International Airport  
Louise Stoll - Independent Consultant  
Richard Tetreault - Vermont Agency of Transportation  
Paul Toussaint - University of Kentucky  
Judith Van Houten - Vermont EPSCoR  
Jennifer Wallace-Brodeur - VT-AARP  
Mark Zydel - McFarland-Johnson, Inc

## Associated Faculty

Pablo Bose - Dept. of Geography  
Roelof Boumans - Gund Institute, RSEN  
William Bowden - RSEN  
Lisa Chase - UVM Extension, VT Tourism Data Center  
Bernard Cole - Dept. of Mathematics & Statistics  
Robert Costanza - Gund Institute, RSEN  
Chris Danforth - Dept. of Mathematics & Statistics  
Mandar Dewoolkar - School of Engineering  
Peter Dodds - Dept. of Mathematics & Statistics  
Margaret Eppstein - Dept. of Computer Science  
Brian Flynn - Office of Health Promotion Research  
Jeff Frolik - School of Engineering  
Lynn Gregory - CDAE  
Paul Hines - School of Engineering  
Britt Holmén - School of Engineering  
Dryver Huston - School of Engineering  
Jennifer Jenkins - RSEN  
Robert Jenkins - School of Engineering  
Jane Kolodinsky - CDAE  
Chyi-Lyi Liang - CDAE  
Sarah Taylor Lovell - Dept. of Plant & Soil Science  
Thomas Macias - Dept. of Sociology  
Robert Manning - RSEN  
Jeff Marshall - School of Engineering  
Deborah Neher - Dept. of Plant & Soil Science  
David Novak - School of Business Administration  
Giuseppe Petrucci - Dept. of Chemistry  
George Pinder - School of Engineering  
Donna Rizzo - School of Engineering  
Adel Sadek - School of Engineering  
Frederick Schmidt - CDAE  
Richard Sicotte - Dept. of Economics  
Julia Smith - Dept. of Animal Science

Laura Solomon - Dept. of Psychology  
Thomas Streeter - Dept. of Sociology  
Austin Troy - RSEN  
Qingbin Wang - CDAE  
Mary Watzin - RSEN  
Walter Varhue - School of Engineering  
Jun Yu - Dept. of Mathematics & Statistics

## Faculty Advisory Committee

Meghan Cope - Dept. of Geography  
Christopher Koliba - CDAE  
Jane Kolodinsky - CDAE  
Robert McCullough - Dept. of History  
David Novak - School of Business Administration  
Adel Sadek - School of Engineering  
Austin Troy - RSEN



TRC Associated Faculty (L to R): Mandar Dewoolkar, Chris Danforth, Maggie Eppstein, Lynn Gregory, Britt Holmén and Paul Hines

# A LOOK BACK AT 2007-2008

## July

**7•30 / 7•31•07**

Center for Excellence in Rural Safety (CERS) Conference co-hosted with University of Minnesota.



## August

**SUMMER**

Brown Bag Discussion Series: "Critical Issues in Transportation"



## September

**9•20•07**

Seminar: "The Changing Face of Highway Safety in Vermont" with Kevin Marshia, VTrans

**9•21•07**

Roundtable Discussion: "Rural Public Transportation: Challenges and Opportunities"

**9•25•07**

Dr. Gopal Patil defends Ph.D. at RPI and joins TRC as a research engineer



## October

**10•9•07**

CCMPO hosts Senator Bernie Sanders at TRC



**10•10•07**

TRC co-hosts Biofuels Workshop which draws 175 participants



**10•18•07**

RSG and UVM host TRANSIMS FHWA peer review at TRC

## November

**11•10•07**

TRC awarded first NETC grants

**11•26•07**

Dr. Lisa Aultman-Hall delivers RSENR seminar

**FALL**

Call issued for new UTC faculty grant proposals



## December

**12•6•07**

Panel Discussion: "Critical Issues in Transportation" with Neale Lunderville, VT Secretary of Transportation; Cindy Burbank, Parsons Brinkerhoff; and Peter Plumeau, RSG



**12•11•07**

PHEV Event with Nancy Gioia, Ford Motor Company



## TRC by the numbers

Graduate students funded .....	27
Faculty on TRC projects .....	40
Colleges involved in TRC projects .....	7
Attendees at outreach events .....	1,691
New staff hired .....	5
Transportation research papers presented at conferences .....	17

## January

**1•31•08**

Elaine Wang honored as a UTC Outstanding Student of the Year at the Council of UTCs 11<sup>th</sup> Anniversary Annual Banquet in Washington, D.C.



## February

**2•13•08**

Seminar: Dr. Joseph Sussman of MIT on "Where is Transportation Going in the 'Complex, Large-Scale, Interconnected, Open, Sociotechnical' Systems Era"

**2•21•08**

PHEV transfer of title ceremony with CVPS President Young, UVM President Fogel and VT Governor Douglas

## March



### SPRING

Six new UTC grants awarded for faculty research projects

**3•20•08**

TRC co-hosts grant writing workshop at UVM with CAS and OSP

**3•27•08**

US DOT RITA site visit



## April

**4•10•08**

Seminar: "Rural Roads & Water" - Charles Luce, USDA Forest Service

**4•10•08**

VT Clean Cities Coalition Stakeholders annual meeting



**4•29•08**

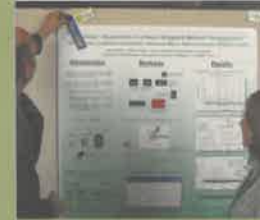
TRC Awarded \$1 million grant for "Transportation Workforce Development"



## May

**5•12•08**

1<sup>st</sup> Annual Transportation Research Expo



**5•16•08**

Seminar: "Merging Epidemiologic Methods with Transportation Data: the Example of the Black Women's Health Study" Dr. Patricia Coogan, Boston University

**5•30•08**

TRC completes first project for VTrans involving traffic simulation on I-89



## June

**6•15•08**

TRC partners with Maine DOT to study rural transit-oriented development



**6•16•08**

Kick-off of the Summer Transportation Institute



**6•24•08**

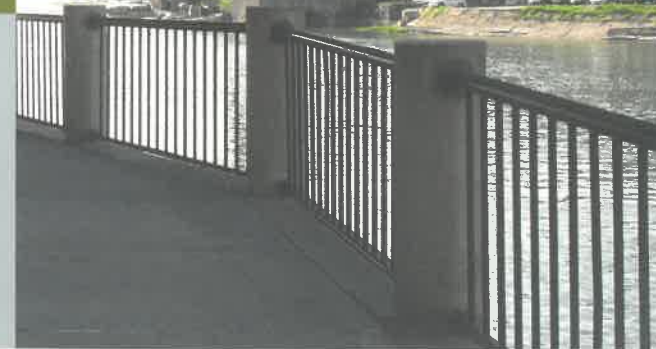
TRC hosts Institute of Transportation Engineers (ITE) meeting



The University of Vermont Transportation Research Center (UVM TRC), located in Farrell Hall, is a hub for research, education and outreach

related to sustainable transportation. The TRC, founded in 2006, serves as the host of the National University Transportation Center (UTC), funded by the U.S. Department of Transportation. The UVM Transportation Center is a UVM Matrix Center with a clear mission to involve all colleges in all aspects of Center programs and projects.

[www.uvm.edu/transportationcenter](http://www.uvm.edu/transportationcenter)



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