



2008 – 2009 Annual Report



OTREC

OREGON TRANSPORTATION RESEARCH
AND EDUCATION CONSORTIUM

OTREC supports innovations in sustainable transportation through advanced technology, integration of land use and transportation, and healthy communities.

Mission OTREC is committed to providing relevant and high-quality research to assist local, state and regional agencies in their work, and expanding the pool of highly trained graduates who choose to work in transportation-related fields. OTREC seeks to build upon our collective efforts and expertise to make Oregon a place where innovation, creativity and multidisciplinary collaboration on surface transportation research, education and technology transfer lead to more sustainable communities. OTREC is committed to this effort by supporting research, training and outreach in a wide variety of transportation-related disciplines.

The Oregon Transportation Research and Education Consortium (OTREC) is a National University Transportation Center (UTC) sponsored by the U.S. Department of Transportation's Research and Innovative Technology Administration.

Consortium Partners

Portland State University
University of Oregon
Oregon State University
Oregon Institute of Technology

This publication is a report of OTREC's transportation research, education and technology transfer activities for October 1, 2008 – September 30, 2009.

OTREC

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OTREC: An Overview

The Oregon Transportation Research and Education Consortium is a National University Transportation Center (UTC) and is a partnership between Portland State University, the University of Oregon, Oregon State University and the Oregon Institute of Technology. In recognition of the attributes that make the State of Oregon unique and wonderful, the Center's theme is advanced technology, integration of transportation and land use, and healthy communities.

OTREC's research program, which is the Consortium's core mission, is heavily rooted in the principles of rigorous peer review, essential not only to the project selection process but also evident in the conduct of research. OTREC received 157 peer reviews for the 47 proposals that were submitted for funding in Fiscal Year 2010, of which 23 were selected.

The research program also reflects the Consortium's commitment to partnership and collaboration. OTREC's principal investigators continue to demonstrate the vital role that universities can play in supporting the research needs of public agencies. In September 2009, OTREC recognized the Oregon Department of Transportation as its Partner of the Year, noting that ODOT is a partner on 38 of OTREC's 78 funded research projects to date.



Illustrating another kind of collaboration, OTREC led a successful proposal for the first research grant offered by the Region X Transportation Consortium, which was formed in January 2008. Faculty from Portland State, Oregon State and the University of Alaska will assess the impacts of climate change on surface transportation in the Pacific Northwest and Alaska.

Bridging academia and practice is the guiding force for OTREC's education and technology transfer programs. OTREC proudly organized the inaugural Oregon Transportation Summit in September 2009 in partnership with the local chapters of the Women's Transportation Seminar, American Planning Association and Institute of Transportation Engineers.

As a complement to OTREC's newsletters and broadcasts via Twitter (twitter.com/otrec) and Facebook (facebook.com/otrec), the purpose of this Annual Report is to provide a sample of OTREC's many noteworthy accomplishments between October 1, 2008 and September 30, 2009. The document is organized in four sections: an Executive Summary; a review of activities in each of OTREC's three theme areas; an in-depth look at OTREC's educational opportunities; and, a final section that documents OTREC's personnel, project portfolio, finances and other UTC information.



2008-2009 Year in Review

OTREC's third year was a great one for graduate and undergraduate students at OTREC's four partner universities. Several students won prestigious national awards this year, including:

- Zachary Horowitz (PSU MSCE '07) won the Neville A. Parker Award for Outstanding Non-Thesis Masters Degree Paper in Policy and Planning from the Council of University Transportation Centers.
- Sara Schooley (UO MCRP) was selected as one of 20 Eno Fellows, who are recognized as the nation's top graduate students in transportation.
- Lisa Diercksen (PSU MSCE '09) and Sirisha Kothuri (PSU PhD '13) were selected to receive 2008 Dwight D. Eisenhower Graduate Fellowships from the U.S. Department of Transportation.

A major educational milestone for OTREC was the addition of a new transportation-related degree. In April 2009, the Oregon Board of Higher Education approved the Oregon Institute of Technology's application to begin offering a Master of Science in Civil Engineering. The degree program, which will be led by OTREC Associate Director Roger Lindgren, will emphasize courses in structural and transportation engineering.

OTREC's founding director, Dr. Robert Bertini, was appointed to the post of Deputy Administrator for the Research and Innovative Technology Administration (RITA) of the United States Department of Transportation (Photo 1, below). He began his new position on August 17, 2009, and has been succeeded as OTREC director by Dr. Jennifer Dill, an Associate Professor of Urban Studies and Planning at Portland State University.

Several OTREC-affiliated faculty earned recognition for their work this year through prestigious awards and coverage in major national publications:

- Michael Scott of Oregon State University is a 2009 winner of the American Society of Civil Engineering's Croes Medal; he also received a National Science Foundation CAREER Award.
- Jennifer Dill of Portland State University was named Woman of the Year by the Portland Chapter of the Women's Transportation Seminar.



- Marc Schlossberg, OTREC’s Associate Director at the University of Oregon, was selected as a Fulbright Scholar to teach and research sustainable transportation at the University of Sheffield in the UK. He was also selected by the New York Times to contribute to an online panel to discuss car-free communities after the paper reported on such a place in Vauban, Germany.

OTREC has seemed to be in the right place at the right time a lot this year, due significantly to USDOT Secretary Ray LaHood’s interest in livable communities. In March, the Research and Innovative Technology Administration profiled three OTREC faculty in its monthly newsletter when it focused on livability. In July, Secretary LaHood was in Portland for the unveiling of a new streetcar which was manufactured in Oregon (Photo 2). In September, just a few months after USDOT, HUD and EPA announced a joint “livability” partnership, Deputy Assistant Secretary for Transportation Policy Beth Osborne addressed a standing-room-only audience in a session at the inaugural Oregon Transportation Summit.

In addition to livability, another hot topic has been electric vehicles (EV). While the State of Oregon has pushed hard to encourage EV adoption and to attract EV manufacturing opportunities, OTREC has been active promoting research and education investments associated with the new technology (Photo 3).

OTREC was extremely pleased to welcome Shelley Row, director of USDOT’s Intelligent Transportation Systems Joint Program Office (Photo 4). The visit included briefings on research by students and faculty in PSU’s ITS Lab as well as a presentation by some of the Lab’s public agency partners.

Other highlights featured in the report:

31 OTREC students attend the sixth annual Region X Student Conference (page 27)

OTREC and NIATT host a conference for transportation educators (Photo 5; page 30)

Visiting Scholars Program brings distinguished guests to Oregon (page 31)

OTREC helps host the 50th Annual Transportation Research Forum (page 38)



Oregon Transportation Summit



The inaugural Oregon Transportation Summit was held at Portland State University on Friday, September 11, 2009. Approximately 250 participated in the day-long event, which featured a faculty retreat, policy briefings, 11 workshops, two congressional visits and a keynote address by best-selling author Tom Vanderbilt.

The event was made possible by OTREC's partnership with the Women's Transportation Seminar, American Planning Association and Institute of Transportation Engineers. Congressman Earl Blumenauer and OTREC's new director, Dr. Jennifer Dill, provided welcoming remarks.

For the 200 practitioners in attendance, the Summit began with plenary sessions that examined transportation strategies to reduce greenhouse gas emissions and recent research on tolling policy.

At the same time, nearly 50 faculty from OTREC's four partner universities held a retreat to identify opportunities to collaborate across campuses and disciplines. They also worked with OTREC's program staff to identify ways to enhance the value of the University Transportation Center in their research and educational endeavors.

At midday, the luncheon included remarks by Portland State University President Wim Weiwel, Portland Mayor Sam Adams and Congressman Peter DeFazio, who presented OTREC's inaugural Transportation Hall of Fame award to Dick Feeney, who served as TriMet's director of government relations for 25 years. The luncheon also featured a keynote presentation by Tom Vanderbilt, author of *Traffic: Why We Drive the Way We Do (and What It Says about Us)*.



In the afternoon, workshops examined eleven different subjects, including active living, rural applications of intelligent transportation systems safety, and electric vehicles. At the most heavily attended session, USDOT Deputy Assistant Secretary for Transportation Policy Beth Osborne appeared by videoconference and described the new federal Livability Partnership initiative. The workshops provided the defining feature of the Summit: the opportunity for academic and practicing transportation professionals to collaborate.

Photos, from left to right: Tom Vanderbilt, best-selling author of *Traffic: Why We Drive the Way We Do (and What It Says About Us)* delivering the keynote address; OTREC Director Jennifer Dill (2nd from right) with OTREC Award Winners Dick Feeney (Peter DeFazio Transportation Hall of Fame), Jerri Bohard, ODOT (Partner of the Year), and Dr. Starr McMullen, OSU (Researcher of the Year); FHWA's Patrick DeCorla-Souza addressing a plenary session; Portland State President Wim Wiewel presenting Congressman Peter DeFazio with a bottle of limited edition PSU Rogue Ale; Beth Osborne (USDOT) addressing a standing-room-only workshop.



Message from Dr. Jennifer Dill, Director

I am very pleased to present OTREC's third Annual Report, covering our accomplishments from October 1, 2008 through September 30, 2009. It is an impressive and exciting list of accomplishments! I have to give full credit to my predecessor, Dr. Robert Bertini, OTREC's director for all but the last few weeks of the year. Dr. Bertini's appointment as the Deputy Administrator for USDOT's Research and Innovative Technology Administration (RITA) in August 2009 recognized not only his distinguished career in transportation, but his hard work to build OTREC from the ground up.

OTREC is entering a new phase in its operations – we're not just a "start-up" any more. Our faculty partners completed 25 projects, with more on the way (see page 38). Completed OTREC projects examined a wide range of important topics, including:

- How to better use freeway loop detectors and weigh-in-motion stations to provide motorists and truck drivers with more accurate estimates of their travel time
- What the impact of replacing the gas tax with a mileage-based fee might be on travel and fuel consumption, particularly for lower income households
- The role of trails and bicycle lanes in people's everyday travel and recreation options
- How technology can be used by members of the community to collect data and improve the livability of their neighborhoods
- The effects of the physical environment on children's travel to school
- Improving the strength and durability of our infrastructure
- Creating better models to improve the efficiency of freight delivery

Over the next year we'll focus even more on getting our results out to practitioners and policy makers. Another priority will be to see how OTREC can support and benefit from new federal transportation priorities, including livability and climate change. As a National UTC, this is an appropriate role for us, building upon our themes and work to date.

Our students are key to our work. They provide the inspiration to improve and expand our teaching, along with the skills and enthusiasm to help carry out our research. They will become the practitioners who will build our future transportation systems and communities for the long term, as well as researchers and educators for the next generation. The effect that OTREC has through its students cannot be understated. We continue to grow the number of students in our degree programs and to provide them with more opportunities to be involved in activities useful for their future careers.

I am very thankful to Robert Bertini, the OTREC Executive Committee and Board of Advisors, and OTREC's staff for all of their hard work over the past year, only some of which could be highlighted in this report. Special thanks go to the people at RITA and our project partners and supporters, who make all of this possible. I'm looking forward to hearing your ideas on OTREC's future.

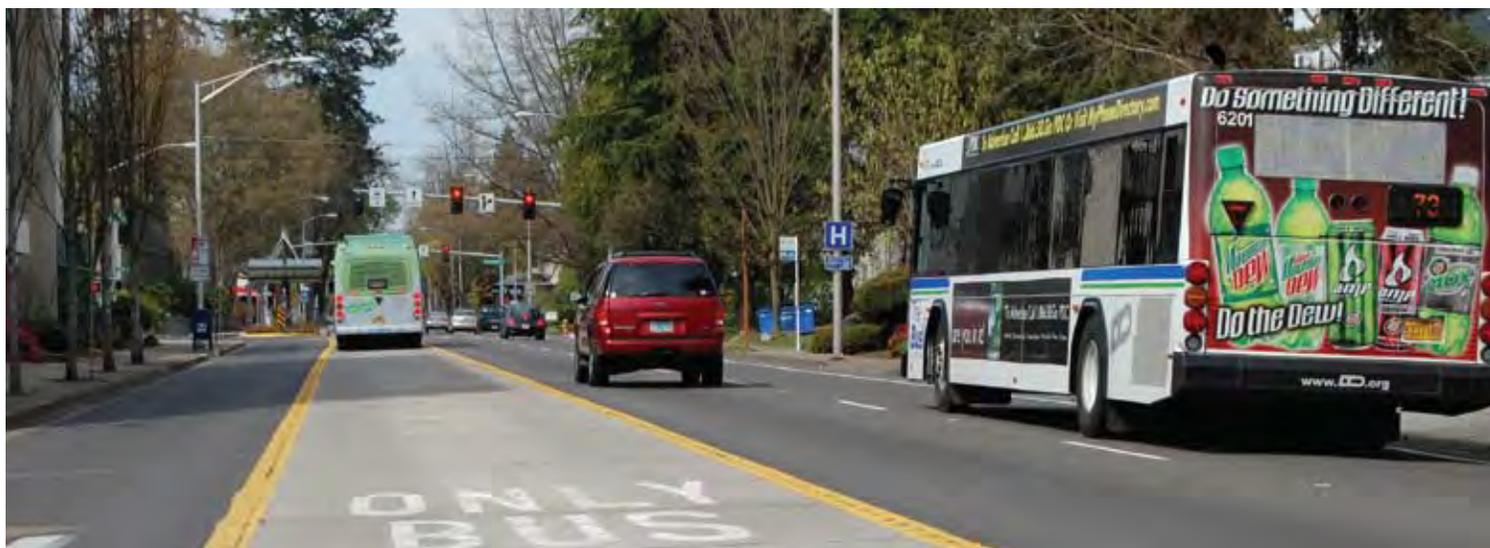
A handwritten signature in black ink that reads "Jennifer Dill". The signature is written in a cursive, flowing style.

Jennifer Dill, Ph.D.
Director, Oregon Transportation Research and Education Consortium
Associate Professor, Nohad A. Touloukian School of Urban Studies and Planning

OTREC by the Numbers

A progress-to-date overview of the Oregon Transportation Research and Education Consortium accomplishments through September 30, 2009.

	Projects Awarded for 2009-2010	Cumulative
Proposals received	47	237
Research projects funded	15	80
Multi-campus projects	10	27
Multi-PI projects	15	63
Research projects partnered with ODOT	8	38
Dollars awarded to research projects	\$1,613,285	\$5,713,732
Faculty partners (running total)	82	82
External sponsors participating in OTREC	34	34
Peer reviewers invited	319	1,044
Peer reviews received	157	720
Labs and research groups (running total)	13	13
Education projects funded	4	16
Dollars awarded to education projects	\$132,319	\$467,904
Graduate students involved in projects (estimate)	18	82
Undergraduate students involved in projects (estimate)	7	38
Technology transfer projects funded	4	13
Dollars awarded to technology transfer projects	\$353,191	\$721,093



THEME: INTEGRATION OF TRANSPORTATION AND



LAND USE

The integration of transportation and land use has helped Oregon earn a national reputation, especially in the field of planning. With new state laws emphasizing the importance of transportation and land use in addressing greenhouse gas emissions, OTREC investigators play a critical role in examining this issue so that Oregon can continue to innovate, especially in the area of modeling and forecasting tools.



Photo Credit: Reach CDC

THEME: INTEGRATION OF TRANSPORTATION AND

Regional Transportation and Land Use Decision Making: A Multistate Analysis

Richard Margerum (University of Oregon) and Susan Brody (Portland State University)

Dr. Richard Margerum and Susan Brody are examining approaches and mechanisms for regional coordination of transportation and land use planning. The study will evaluate regional approaches to coordinating land use and transportation in at least four sites across the United States, and will bring together researchers and case study practitioners to discuss the implications of those findings in a forum tentatively scheduled for September 2010. The results of this study will provide transportation and land use officials at the state, regional and local level a description of alternative institutional arrangements and an assessment of their effectiveness in integrating regional transportation planning and decision making. The research forum will provide an opportunity to refine these findings, share lessons, and identify more specific implications for policy and management at the local, regional, state and national levels.

The study builds on earlier work that was funded by the Oregon Department of Transportation's Research Unit. That investigation began with an assessment of Oregon's Area Commissions on Transportation (ACTs) and their relationships to Metropolitan Planning Organizations. The Oregon study used interviews, an online survey and detailed review of three ACTs, and reviewed similar regional arrangements in Washington, California and Iowa.

The findings from the first study covered five areas: travel sheds and travel corridors; STIP prioritization process; representation and stakeholder involvement; communication and coordination; and transportation policy and strategic investment. The investigators found that Oregon's ACTs are providing many benefits, especially in areas such as knowledge sharing and leveraging funds across jurisdictions.



Earl Blumenauer, US Congressman

“Oregon has long enjoyed an excellent reputation for integrating transportation and land use. In its first three years, OTREC has quickly demonstrated how to put this reputation to work by funding relevant research, increasing educational opportunities, and convening events to help practitioners in the field. With the Obama administration’s emphasis on “livable communities,”-- something I’ve focused on for my entire career--I’m pleased to see Oregon leading the way in university-based expertise.”

LAND USE

Bicycle and Household Activity Models

John Gliebe (Portland State University)

Regional travel forecasting models are simultaneously the primary support and the bane of contemporary transportation planning processes. As the policy mandates increase – to evaluate the impacts of different planning scenarios on greenhouse gases, for example – the models and their architects endeavor to keep up.

Through a close partnership with the modeling staff at Portland’s metropolitan planning organization, Metro, and Oregon DOT, Dr. John Gliebe has been leading several research projects aimed at improving these models. In one, known as the Dynamic Activity Simulation for Households (DASH), Dr. Gliebe and his team have focused on the principle that travel is derived from individuals engaging in various activities to meet personal and household needs.

In another, Dr. Gliebe addressed the problem that existing regional travel forecasting systems are not typically set up to forecast usage of bicycle infrastructure and are insensitive to bicyclists’ route preferences in general. Using data gathered through a revealed preference survey, Dr. Gliebe’s team developed a bicyclist route choice model, which is able to estimate how much cyclists will deviate from the shortest route, the assumption built into most forecasting models today.

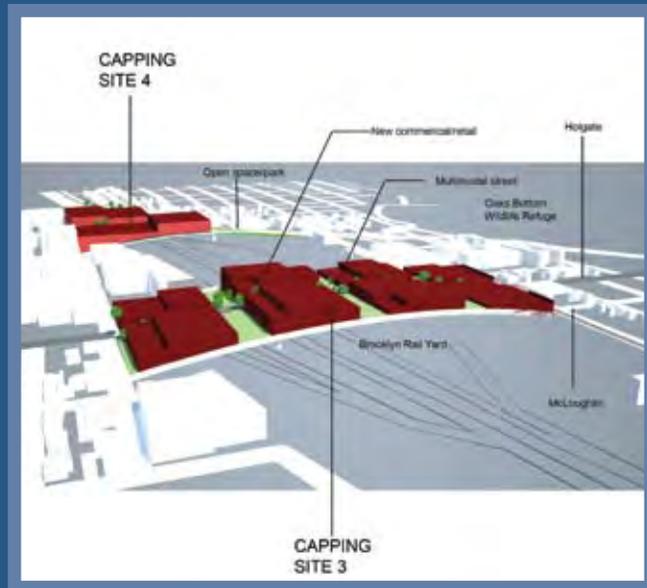


Photo Credit: DriveLessSaveMore.com

Capping and Connectivity: An Urban Rail Yard Case Study

John Jeffrey Schnabel (Portland State University)

Jeff Schnabel, a professor in the Architecture Department at Portland State University, has set out to determine if capping the Brooklyn Rail Yard in Southeast Portland could achieve the success witnessed in places as diverse as Seattle, Duluth and Barcelona, where covering freeways and creating air rights has mended the urban fabric. The goal of the project is to engage stakeholders (including Union Pacific Railroad, the Portland Development Commission and nearby neighborhood associations) in the development of a master plan for a site within the 100-acre yard. The project is funded with a “small start” grant from OTREC.



THEME: **ADVANCED TECHNOLOGY**



A blue semi-truck is driving on a road. The truck is the central focus, moving from left to right. The background shows a clear sky, some trees, and a utility pole. The truck has a large chrome grille and a blue cab. The text is overlaid on a semi-transparent blue box in the upper left quadrant of the image.

Advanced technologies and the strategies that they support – such as expediting incident response and providing travelers with real-time information – help transportation agencies do more with less. By examining how technologies can enhance safety and improve the performance of infrastructure, OTREC’s work can support progress on national priorities such as transportation choices, economic competitiveness and energy independence.

THEME: **ADVANCED TECHNOLOGY**

Data Reveal Freight Dynamics and Travel Times

Christopher Monsere (Portland State University)

A vibrant economy depends on the ability to move freight efficiently, reliably and timely. In Oregon, ODOT's Green Light program automates the weighing of freight in motion to expedite the movement of goods. The program has supplemented existing freight data with an astounding 42 million records (to date) of vehicle gross and axle weight. Could this resource be used to generate performance measures, traveler information and other freight-related metrics?

Dr. Christopher Monsere and his research team recently completed an investigation into using these data to generate corridor-level performance measures, real-time traveler information and other freight-related metrics. The researchers revealed some promising results. On primary routes, there are sufficient data to calculate travel times and to provide insight into the movement of freight production and consumption (net increase and decrease, respectively, in truck weight). While enough data exists, the large spacing of stations is a significant constraint on providing travel time in real time.

Nonetheless, tapping into an existing rich data source to improve transportation operations and performance is a great example of how researchers and public agencies are working together.



Wireless Communications Enable Travel Time Estimation

J. David Porter and David Kim (Oregon State University)

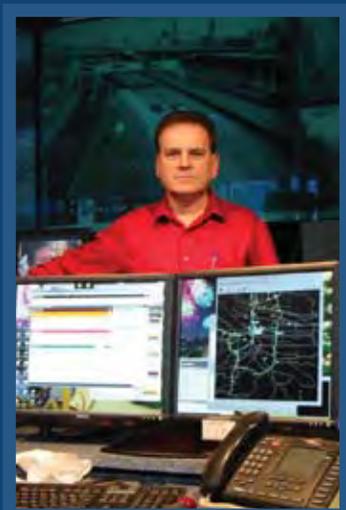
Roadside infrastructure such as toll and commercial vehicle tag readers provide a wealth of data but only represent a portion of the vehicle fleet. Are there additional vehicle-based or mobile-based technologies that provide data? Dr. J. David Porter and Dr. David Kim from Oregon State University are looking hard at this issue. With the proliferation of Bluetooth-enabled devices becoming commonplace, an opportunity to use time-stamped media access control (MAC) address matching appears promising. The research team is working closely with ODOT to determine if this new approach to estimating travel time can be realized. Initially, it appears to offer a number of advantages over more conventional methods, including lower costs of hardware and software, the volume of data that can be collected over time and ease of implementation. The latter advantage makes this data collection method suitable for quick, temporary or permanent deployment along different types of travel corridors, including interstate highways, freeways, and other principal and minor arterial systems. Watch out for the results of this groundbreaking work in the near future.



Technology Opens Doors to Pricing Strategies

**B. Starr McMullen (Oregon State University) and
Tony Rufolo (Portland State University)**

As the nation moves closer to adopting user-fee strategies to replace the traditional gasoline tax, a host of questions emerge both from a technological and behavioral standpoint. While great advances in technologies such as cameras, roadside detectors, wireless communications and automatic vehicle location devices have broken down technological barriers for implementing dynamic user-fee programs, more work is needed to overcome user acceptance. This is where Oregon researchers are making a difference. At Oregon State University, Dr. B. Starr McMullen recently completed an important research study to look at the socio-economic effects of implementing a vehicle mileage fee. The research shows that the tax burden to lower income groups is a change of less than one percent of their income. The impact of the change to a vehicle miles traveled (VMT) fee on rural areas was found to be much less than expected; on average a household in a rural location would pay less under a revenue neutral VMT fee, whereas those in urban areas would pay slightly more. At Portland State University, Dr. Tony Rufolo is looking at the same dataset to understand the rush-hour user response to a mileage fee; differences in response based on the fuel efficiency of the vehicle; effect transit service and access; and more refined analysis of the effect of household income on the response to pricing. Both projects provide the needed data to help better shape and set the stage for Oregon to adopt user fee programs that are fair and equitable to the range of user groups from the economically disadvantaged to the context of rural drivers.

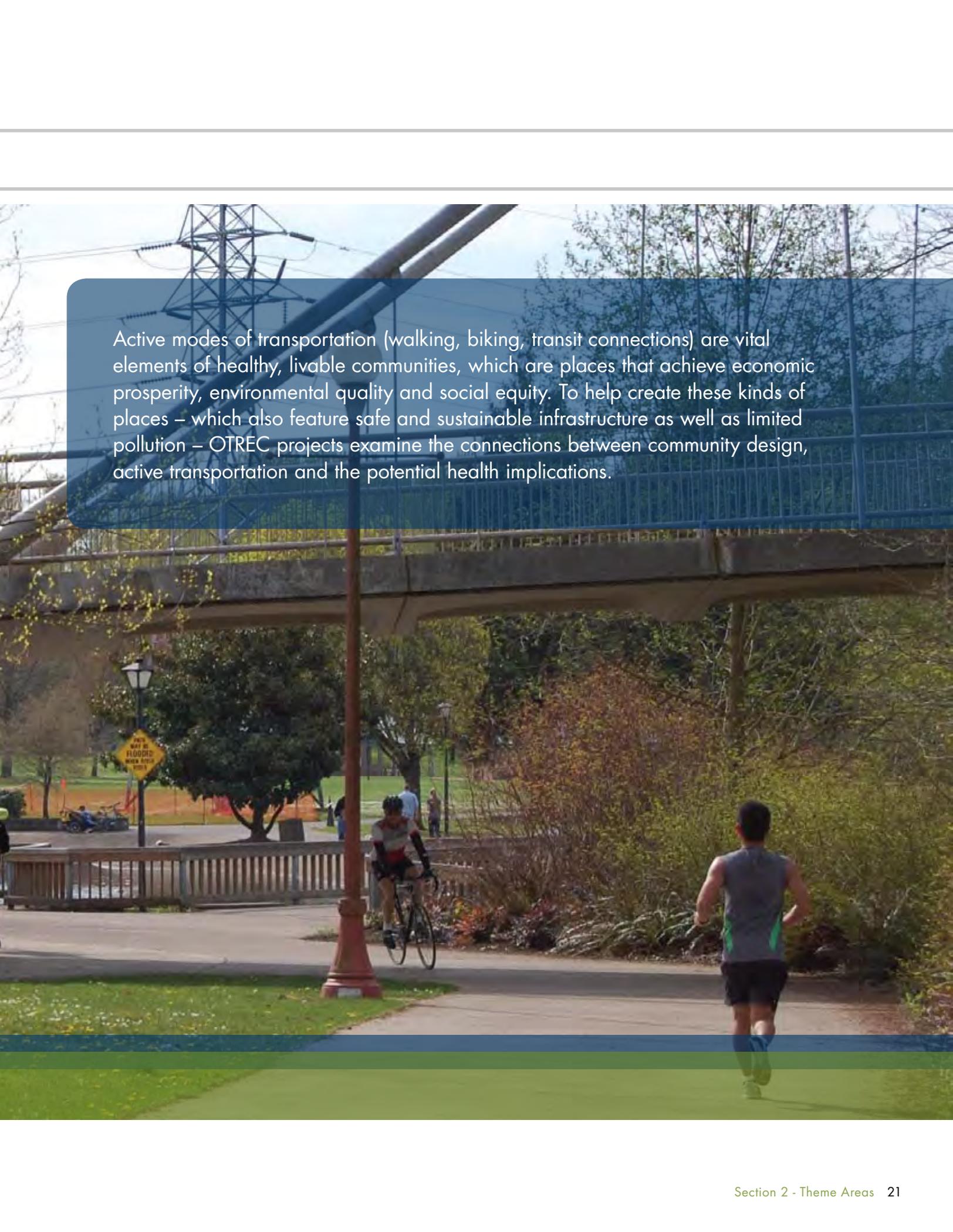


**Dennis Mitchell,
Oregon DOT Region 1 Traffic Engineer**

“OTREC’s support for students and faculty who work with archived transportation data has enabled me to better utilize the data in developing strategies that keep people and goods moving in the Portland metropolitan area. This collaboration between the universities and our transportation agencies improves our collective decision-making.”

THEME: HEALTHY COMMUNITIES



A photograph of a park scene. In the foreground, a man in a grey tank top and black shorts is running away from the camera on a paved path. To his left, a cyclist in a white and red jersey is riding a road bike. In the background, a concrete pedestrian bridge with a metal railing spans across the path. A yellow diamond-shaped sign on a black post reads "ROAD MAY BE FLOODED WHEN RAIN FALLS". There are trees, a utility pole, and a grassy area in the distance. The sky is clear and blue.

Active modes of transportation (walking, biking, transit connections) are vital elements of healthy, livable communities, which are places that achieve economic prosperity, environmental quality and social equity. To help create these kinds of places – which also feature safe and sustainable infrastructure as well as limited pollution – OTREC projects examine the connections between community design, active transportation and the potential health implications.

THEME: HEALTHY COMMUNITIES

University of Oregon Makes Healthy, Livable Communities a Priority

Marc Schosslerg, Nico Larco, Jessica Greene & Yizhao Yang (University of Oregon)

Researchers at the University of Oregon (UO) have been focused on taking a multidisciplinary approach to create more livable and sustainable communities. This year, UO chose the Sustainable Cities Initiative as one of five “Big Ideas” that are shaping the future academic priorities at the university. The goal is to promote research, education, service and public outreach related to the development of sustainable cities.

One of the Initiative’s first actions was to host an “Expert In Residence” on campus for a week of engagement on and off campus. Bill Wilkinson, former executive director of the National Center for Biking and Walking and a national pioneer of the modern bicycle advocacy movement, gave guest talks to classes, hosted informal discussions with students and gave a keynote address to a sustainability conference.

OTREC has continued to support UO research relating to healthy communities through the examination of the connection between urban form and transportation behavior. Prof. Nico Larco’s research has focused on sustainable suburbs and is examining case studies of suburban multifamily housing in Oregon, Arizona, Massachusetts and Florida. He has found that residents’ behavior differs distinctly – in favor of livability – from the expectations of planners, architects and developers. Dr. Marc Schlossberg, with other colleagues, is developing and implementing mobile mapping tools that communities can use for quick, accurate and useful walkability analysis. He has also been working with Dr. Jessica Greene on a multidisciplinary national analysis of travel behavior, residential preference, and urban design of twenty different cities to compare new urbanist and traditional suburban neighborhoods.

The importance of creating safe bike and walk routes to schools is vital to the health of a community. From 1969 to 2001, the share of children going to school by car rose from 18% to 65%, representing as much as 30% of morning peak-hour traffic in some communities. Dr. Yizhao Yang and her team set out to examine whether and how getting to school influences where parents decide to live. The research found that programs such as “Safe Route to School” should aim to educate and encourage parents at least as much as these initiatives focus on physical walkability issues.



**Carlotta Colette, Portland Metro Councilor,
Chair Joint Policy Advisory Committee on Transportation**

“One of the greatest challenges facing our region is creating communities where people are able and eager to walk and bike to their destinations. Metro is addressing this by investing in “active transportation corridors” that provide seamless, safe, enjoyable and efficient walking, bicycling and transit connections. The presence of OTREC, with its students and faculty at Portland State, the University of Oregon, Oregon State and the Oregon Institute of Technology, ensures that policy makers have the benefit of local research regarding which strategies represent smart investments. In addition to research, organizations such as Metro benefit from access to OTREC’s excellent students as interns during their studies and as new professionals after they graduate.”

Improving Mode Choices by Understanding Cyclists' Travel Behavior

Dr. Jennifer Dill (Portland State University)

It is an objective of many governments to create healthy communities by encouraging bicycling to reduce congestion, promote public health and increase social equity. With rates of obesity, heart disease and related health problems increasing in the U.S., many policy makers are looking for ways to increase physical activity in everyday life. Using a bicycle instead of a motor vehicle for a portion of everyday travel could help address these problems.

Current rates of bicycling for daily trips in major U.S. urban areas are very low, even though bicycling is a popular form of recreation throughout the country. However, over 60% of all personal trips are five miles or less in length – a reasonable distance to ride a bike – and nearly 40% are two miles or less. Given the potential for bicycling for functional daily travel, why aren't more people cycling? While many surveys have been conducted about what factors might make the public more likely to ride a bicycle, there is very little data showing which investments actually do impact people's propensity to cycle. Dr. Jennifer Dill's study attempted to fill that gap by tracking frequent cyclists' route choice in Portland over 9 months in 2007 using GPS devices. From this data, Dr. Dill's findings indicate the following:

- Bicyclists do use and value the infrastructure provided (lanes, paths, and boulevards).
- Well-connected, low-traffic streets, bicycle boulevards and separate paths may be more effective than bicycle lanes on busy streets at getting more women and novice adults bicycling.
- A well-connected street network also appears to be important, both for minimizing travel distances and allowing for an efficient network of low-traffic streets and bicycle boulevards.
- While the data indicate that bicycle boulevards and paths may be more effective than bike lanes on arterials at encouraging more bicycling among groups of people who currently do not bicycle much, the importance of bike lanes should not be ignored. Over one quarter (28%) of all of bicycle travel occurred on streets with bike lanes. The data indicate that adding bike lanes to more arterials might reduce travel times and distances, particularly for experienced bicyclists.
- Finally, for many short trips (3 miles or less), the bicycle was somewhat time-competitive with the automobile – within five minutes. Shorter trips are most likely to occur in areas with a greater mix of land uses and higher network connectivity, making potential origins and destinations closer. Therefore, policies that promote these features are likely to support more bicycling for transportation.



Education



The educational mission of every University Transportation Center is to support a multi-disciplinary program of course work and experiential learning that reinforces the transportation theme of the Center. Across its four campuses, OTREC seeks to do this by increasing the number of courses and degrees available to both graduate and undergraduate students. OTREC is also committed to creating opportunities for students to participate in research projects.



Student of the Year

2008 Outstanding Student of the Year: Christo Brehm, University of Oregon



UO's Christo Brehm was chosen as OTREC's 2008 Student of the Year. Christo Brehm is currently pursuing a concurrent graduate degree in Community and Regional Planning and Landscape Architecture at the University of Oregon. He holds an undergraduate degree in Planning, Public Policy and Management and has spent many years working in the field of affordable housing. While a University of Oregon student, Christo has designed one of the nation's first assessment tools of the emerging Complete Streets concept. He has traveled across the country (MD, VA and MN) leading community assessment workshops using this Complete Streets tool that works within a mobile GIS environment. Christo co-authored a paper for the 2009 TRB national conference and has presented his work at the national Pro Bike / Pro Walk conference. He has been asked by leaders in two Oregon state agencies to describe and share his work with smaller Oregon communities and is a founding member and director of a campus-wide, interdisciplinary transportation and livability student group at the University of Oregon called LiveMove. During this time, Christo has worked with Dr. Marc Schlossberg and has been a truly exceptional student researcher and leader.

2009 Outstanding Student of the Year: Nathan McNeil, Portland State University

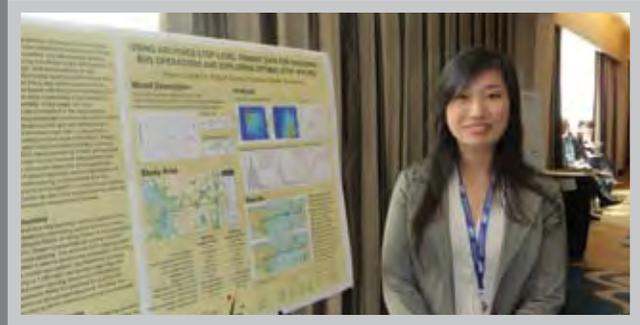


Nathan McNeil was chosen as OTREC's 2009 Student of the Year. Nathan is in his second year of the Master of Urban and Regional Planning program at PSU. He holds a Bachelor of Art in History from Columbia University. He is working with Professors Jennifer Dill and Christopher Monsere to evaluate Portland's "Bike Boxes." He was the recipient of the 2008-2009 Rex Burkholder and Lydia Rich Scholarship, awarded through the Initiative for Bicycle and Pedestrian Innovation at PSU. Last fall, he received an award at the Region X Student Conference for best poster. Nathan is conducting an assessment of neighborhoods in Portland and Copenhagen to identify policies for improving active transportation outside of central city areas, and is examining how bicycling can be incorporated into the application of walkable "20-minute" neighborhoods. Nathan's completed projects include formulating a strategy for Portland's MPO, Metro, to incorporate climate change concerns into planning activities; and surveying Portland stakeholders on how Portland State University can serve the region in the area of sustainability. When he lived in New York, Nathan worked for a community economic development non-profit, worked in social policy research and, more recently, served as a performance auditor for the New York Metropolitan Transportation Authority Office of the Inspector General.

Student Groups and Activities

OTREC endeavors to enrich the educational opportunities for graduate and undergraduate students in many ways – funding the development of new courses, encouraging the inclusion of students in research, supporting travel to the Transportation Research Board annual meeting – but some of the most rewarding experiences are student-led.

The Sixth Annual Region X Student Conference was hosted in November 2008 by the University of Washington in Seattle. Over 50 students participated, including 20 from Portland State, eight from Oregon State and three from the University of Oregon. The other annual rite of passage for OTREC students is Oregon ITE's William C. Kloos Traffic Bowl. The Jeopardy-style tournament tests students on their knowledge of transportation engineering and history with a reasonable dose of arcane factoids. Teams of students from PSU, OSU, OIT, the University of Washington and the University of Portland competed in the 17th Annual Bowl in November 2008. OTREC was represented on the podium by PSU (3rd Place).



In addition to these annual events, a major feature of transportation student life on each OTREC campus is the transportation student group. The groups' main activities include field trips, guest speakers, job fairs and other social activities. Each group's profile here includes its website and the name of the group leader(s) for 2009-10. These are great resources for prospective students:



Students in Transportation Engineering and Planning (STEP) is the name of PSU's group. In 2008-09, the group's highlights included a wide variety of individual and group awards, including best presentation at the Region X Student Conference (Meead Saberi), best ITE Student Chapter website and the induction of Lisa Dierksen to the Denise Denton Women Engineers Hall of Fame. Website: www.step.groups.pdx.edu. 2009-10 Leader: Rolando Melgoza.



Transportation and Livability Student Group (LiveMove) is the UO's group. One of the group's founding members, Christo Brehm, was named OTREC's 2008 Outstanding Student of the Year. The group helped restart Bicycle Appreciation Days as a monthly event and hosted two notable guest speakers: bike policy pioneer Bill Wilkinson and adventure cyclist Willy Weir. Website: www.uoregon.edu/~livemove. 2009-10 Leaders: Price Armstrong and Christo Brehm.



OSU's ITE Student Chapter's members were active both on campus and beyond. On campus, members helped inaugurate Kearney Hall, which is the LEED-certified renovation of historic Apperson Hall. The group's field trips included a bike tour of Portland as well as visits to ODOT's traffic operations center in Portland and TriMet's Ruby Junction transit operations center in Gresham. Website: groups.engr.oregonstate.edu/ite. 2009-10 Leader: Kyle Taniguchi.



OIT's ITE Student Chapter's highlights also involve TRB, Traffic Bowl, field trips and summer internships. 2008-09 leader Eric Leaming attended TRB's annual meeting in January 2009. Two other members had summer internships with ODOT, one as a bridge inspector and one with the Department's pavement and aggregate lab in Salem. Website: www.oit.edu/ite. 2009-10 Leader: Shaun Bready.

Educational Programs

PORTLAND STATE UNIVERSITY

Department of Civil and Environmental Engineering Maseeh College of Engineering and Computer Science

- Bachelor of Science (BS) in Civil Engineering
- Master of Science (MS) in Civil and Environmental Engineering
- Master of Engineering (MEng) in Civil and Environmental Engineering
- Master of Engineering (MEng) in Civil and Environmental Engineering Management
- Ph.D. in Civil and Environmental Engineering

Toulan School of Urban Studies and Planning College of Urban and Public Affairs

- Master of Urban and Regional Planning (MURP)
- Master of Urban Studies (MUS)
- Ph.D. in Urban Studies

School of Business Administration

- Supply and Logistics Management (BA/BS)

Interdisciplinary Programs

- Dual Master's Degree in Urban and Regional Planning and Civil and Environmental Engineering
- Graduate Certificate in Transportation

UNIVERSITY OF OREGON

Department of Planning, Public Policy and Management School of Architecture and Allied Arts

- Master of Community and Regional Planning (MCRP)

OREGON STATE UNIVERSITY

School of Civil and Construction Engineering College of Engineering

- Bachelor of Science (BS) in Civil Engineering
- Master of Science (MS) in Civil Engineering
- Master of Engineering (MEng) in Civil Engineering
- Ph.D. in Civil Engineering

OREGON INSTITUTE OF TECHNOLOGY

Department of Civil Engineering and Geomatics

- Bachelor of Science (BS) in Civil Engineering
- Master of Science (MS) in Civil Engineering



Alumni Highlights



MATT BERKOW, PSU '08 Matt graduated from the Master of Urban and Regional Planning Program in 2008 and is currently working as a planner with Alta Planning + Design, a consulting firm specializing in bicycle, pedestrian and trails planning. As a graduate student at PSU, Matt worked in the ITS Lab examining automatic vehicle location data collected by TriMet buses. He also completed an internship at Metro. Matt presented at TRB in 2008 and 2009 and his research was published in the Transportation Research Record in 2009. Matt's master's thesis project was awarded Student Project of the Year by the American Institute of Certified Planners (AICP). As a transportation planner at Alta, Matt has worked on bicycle and pedestrian planning projects for cities in the Pacific Northwest, Mexico and Dubai. He is also involved in the National Bicycle and Pedestrian Documentation Project.



SARAH COATES HUGGINS, UO '07 Sarah Coates Huggins graduated in 2007 from the Community and Regional Planning master's program and is currently working for the City of Portland's Bureau of Parks and Recreation. Through UO's Community Planning Workshop, Sarah worked in her first year on the City of Talent Parks Master Plan and in her second year as the student project manager of the Eugene Pedestrian and Bicycle Strategic Plan. The plan won awards from the American Institute for Certified Planners and the Oregon Chapter of the American Planning Association. She has worked for Portland Parks and Recreation since graduating from UO. Her area focuses on looking at ways to strengthen and grow Portland's park system, including developed parks, open spaces and trail networks.



TEGAN HOUGHTON, OSU '08 Tegan Houghton graduated in 2008 with a Master of Science in Civil Engineering; she also earned her Bachelor of Science in Civil Engineering from OSU in 2007. Tegan is now working in the traffic engineering division of CH2M HILL's Portland office. Tegan completed both her undergraduate honors thesis and her masters thesis under the supervision of Dr. Karen Dixon. For the latter, she conducted an international scan of safety audit methodologies and evaluated the advantages and disadvantages of what she found for the Interactive Highway Safety Design Model. As an undergraduate, Tegan won the 2006 Undergraduate Award from the Women's Transportation Seminar – Portland Chapter. Her work for CH2M HILL involves signal design and operations analysis. Most recently, she has been working on roadway and track design for TriMet's Portland-Milwaukie Light Rail project.



ERIC LEAMING, OIT '09 Eric Leaming graduated with a Bachelor of Science in Civil Engineering in 2009 and is now working for ODOT. For his senior-year project, he was on a team that designed a sustainable, mixed-use subdivision in Klamath Falls. In his position, he was charged with designing the site's pedestrian-friendly road network and estimating basic trip generation for the surrounding local road network. At ODOT, he is participating in the Graduate Engineering Program, for which he will rotate through three different ODOT offices over two years. His first rotation is with ODOT's Transportation Planning Analysis Unit. His current project with TPAU is a modernization project for I-5 through Albany and Millersburg. For his next rotation, he will be doing signal design with ODOT's Region 2 Traffic Engineering unit.

Transportation Education Conference



There are more than 200 civil engineering programs at colleges and universities around the United States and nearly all of them have one or two required transportation courses as part of their undergraduate program. The objective of the Transportation Education Conference, held at Portland State University in June 2009, was to improve the content and delivery of transportation engineering education.

The conference was co-hosted by Robert Bertini (Portland State University and OTREC) and Michael Kyte (University of Idaho and NIATT, the National Institute for Advanced Transportation Technology). More than 60 educators – mostly from the U.S. plus several from abroad – attended. The first day included eight presentations:

- David Levinson, University of Minnesota: Simulating Transportation for Realistic Engineering Education and Training (STREET)
- Andrew Nichols, Marshall University: Developing an Engineering Environment Fostering Effective Critical Thinking Through Measurements (EFFECT)
- Shane Brown and Brock Andrews (Washington State University) with Michael Dixon (University of Idaho): What are the “Understandings” for the Introductory Transportation Engineering Course.
- Jennifer Dill, Portland State University: To Be a Transportation Engineer or Not, How Civil Engineering Students Choose a Specialization.
- Joe Mahoney, University of Washington: Pavement Interactive! A Wiki.
- Karen Dixon, Oregon State University: Integrating Textbooks and Classroom Goodies.
- Wayne Kittelson, Kittelson and Associates: What Undergraduates Should Understand.
- Rod Turochy, Auburn University: What Do We Currently Teach?

The second day shifted from lecture format to more interactive workshops:

- How do we map the learning domain for transportation engineering? Led by Shane Brown (Washington State University) and Michael Dixon (University of Idaho).
- How do we create active learning environments for undergraduate transportation engineering students? Led by Karl Smith (University of Minnesota/Purdue University).

A proceedings document was produced for the conference and is available on the OTREC and NIATT websites or by emailing OTREC’s Jon Makler (makler@otrec.us).

Visiting Scholar Program

OTREC's Visiting Scholar Program continued to bring exciting academics and practitioners from around the country (and beyond) to speak at Portland State University's weekly transportation seminars, which are available as live and archived webcasts. Speakers during this year included:

- Robin Chase, the founder of ZipCar and CEO of GoLoco
- David Levinson, Director of the University of Minnesota's Networks, Economics and Urban Systems (NEXUS) research group
- Scott Samuelson, Director of the University of California, Irvine's National Fuel Cell Research Center
- Luca Quadrifoglio, Texas A&M University
- Peter Furth, Northeastern University
- Geoff Rose, Director of the Institute of Transportation Studies, Monash University
- Michael Sivak, University of Michigan's Transportation Research Institute
- Benjamin Coifman, Ohio State University
- Brian Lee, University of Washington
- David Goodstein, California Institute of Technology

Please visit <http://otrec.us/vsp.php> for more information, including archived webcasts.



OTREC Staff and Structure

Key Personnel Our principal staff, including OTREC administrative staff and partner university associate directors:



Jennifer Dill, Ph.D.
Director,
Portland State University



Marc Schlossberg, Ph.D.
Associate Director,
University of Oregon



Chris Higgins, Ph.D., P.E.
Associate Director,
Oregon State University



Roger Lindgren, Ph.D., P. Eng.
Associate Director,
Oregon Institute of Technology



Hau Hagedorn
Research Program
Manager



Jon Makler, AICP
Education and Tech
Transfer Program Manager



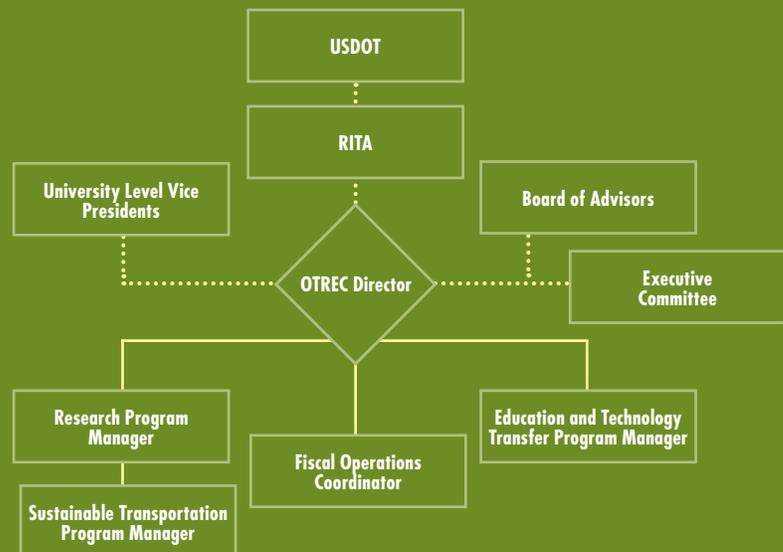
Carol Wallace
Fiscal Operations
Coordinator



John MacArthur
Sustainable Transportation
Program Manager

Organizational Chart

OTREC is a National University Transportation Center under the U.S. Department of Transportation's Research and Innovative Technology Administration (RITA). Dr. Jennifer Dill directs OTREC. An Executive Committee is made up of one faculty member from each partner institution, an ODOT representative and a FHWA representative. The OTREC Board of Advisors consists of representatives from transportation-related organizations. Each university's Vice President for Research (or equivalent) and their staff also devote time and energy to OTREC's administration and oversight.



Board of Advisors

Scott Bricker Executive Director
Bicycle Transportation Alliance

Mike Hoglund Research Director
Metro

Phillip Ditzler Administrator
Oregon Division, Federal Highway Administration

Michael Baltes Director
Office of Technology, Federal Transit Administration

Lavinia Gordon Director
Bureau of Transportation System Management,
City of Portland Office of Transportation

Ruth Harshfield Executive Director,
Oregon Alliance for Community Traffic Safety

Rob Inerfeld Transportation Planning Manager
City of Eugene

Susie Lahsene Corporate Planning Manager,
Port of Portland

Jay Lyman Chief Operating Officer,
David Evans & Associates

Randy McCourt Principal
DKS Associates

Neil McFarlane Executive Director of Capital Projects
TriMet

Dr. Nancy Nihan Director
Transportation Northwest (TransNow)

Hon. Lynn Peterson Chair
Clackamas County Board of Commissioners

Tom Schwetz Director of Development Services,
Lane Transit District

Doug Tindall Deputy Director, Highway Division
Oregon Department of Transportation

Bill Upton Oregon Modeling Steering Committee,
Transportation Modeling Program Manager,
Oregon Department of Transportation

Executive Committee

OTREC is supported by an Executive Committee whose input and support has been instrumental to our operations. The committee played a key role in forming the strategic plan, theme and programmatic goals; shaping the annual request for proposals; and, assisting with project funding decisions.

Dr. Jennifer Dill
OTREC Director 2009-10

Dr. Robert Bertini
OTREC Director 2008-09

Dr. Marc Schlossberg
OTREC Associate Director
University of Oregon

Dr. Chris Higgins
OTREC Associate Director
Oregon State University

Dr. Roger Lindgren
OTREC Associate Director
Oregon Institute of Technology

Barnie Jones
Research Manager
Oregon Department of Transportation

Satvinder Sandhu
Community Planner
Oregon Division, FHWA



OTREC Executive Committee (from left): Marc Schlossberg, Roger Lindgren, Robert Bertini, Barnie Jones, Chris Higgins and Satvinder Sandhu.

2009–10 Investigators and Partners

Year 4 Investigators:

George Beard, Hatfield School of Government, PSU
Juli Brode, Architecture, UO
Susan Brody, National Policy Consensus Center, PSU
Mecit Cetin, Civil and Environmental Engineering, Old Dominion University
Lyn Cornell, Oregon DOT
Jennifer Dill, Urban Studies and Planning, PSU
Peter Dusicka, Civil and Environmental Engineering, PSU
Ihab Elzeyadi, Architecture, UO
Wu-chi Feng, Computer Science, PSU
Miguel Figliozzi, Civil and Environmental Engineering, PSU
Linda George, Environmental Science and Management, PSU
Mark Gillem, Architecture and Landscape Architecture, UO
Ashely Haire, Civil and Environmental Engineering, PSU
Christopher Higgins, Civil, Construction and Environmental Engineering, OSU
Kate Hunter-Zaworski, Civil and Construction Engineering, OSU
Jason Ideker, Civil and Construction Engineering, OSU
Ken Kato, Geography, UO
David Kim, Industrial and Manufacturing Engineering, OSU
Gerardo Lafferriere, Mathematics and Statistics, PSU
Nico Larco, Architecture, UO
Ming Lee, Civil and Environmental Engineering, UAF
John MacArthur, PSU
Mario Magana, Electrical Engineering and Computer Science, OSU

Richard Margerum, Planning, Public Policy and Management, UO
Noreen McDonald, City and Regional Planning, UNC
Gail McEwan, National Policy Consensus Center, PSU
Yvonne Michael, Epidemiology and Biostatistics, Drexel University
Christopher Monsere, Civil and Environmental Engineering, PSU
Terry Moore, Planning, Public Policy and Management, UO
Phillip Mote, Oregon Climate Change Research Institute, OSU
Peter Murchie, National Policy Consensus Center, PSU
Andrew Nichols, College of Information Technology and Engineering, Marshall University
Robert Parker, Community Service Center, UO
J. David Porter, Industrial and Manufacturing Engineering, OSU
Marc Schlossberg, Planning, Public Policy and Management, UO
Michael Scott, Civil, Construction and Environmental Engineering, OSU
James Strathman, Urban Studies and Planning, PSU
Jennifer Tanner, Civil and Architectural Engineering, University of Wyoming
Kristin Tuft, Computer Science and Civil and Environmental Engineering, PSU
Lynn Weigand, Initiative for Bicycle and Pedestrian Innovation, PSU
Asha Weinstein Agrawal, Urban and Regional Planning, San Jose State University

Year 4 Partners

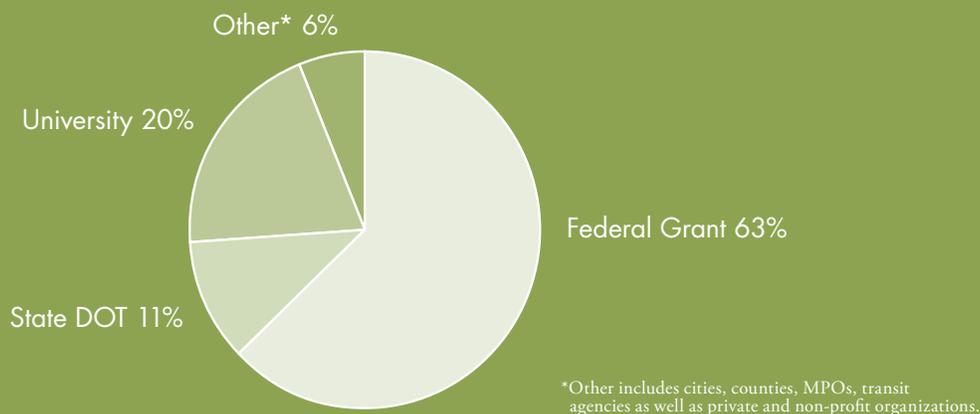
American Institute of Architects
City of Eugene
City of Portland Bureau of Transportation
Eugene Water and Electric Board
Harris/ Eastside Combined Elementary School
Institute of Transportation Engineers
Lane County Farm Bureau
The Lemelson Foundation
National Multi Housing Council
Old Dominion University
Oregon Department of Transportation

Oregon Institute of Technology
Oregon State University
Portland State University
James and Marion Miller Foundation
Region X Consortium
Rocky Mountain Institute
San Jose State University
TriMet
University of North Carolina
University Of Oregon

Finance

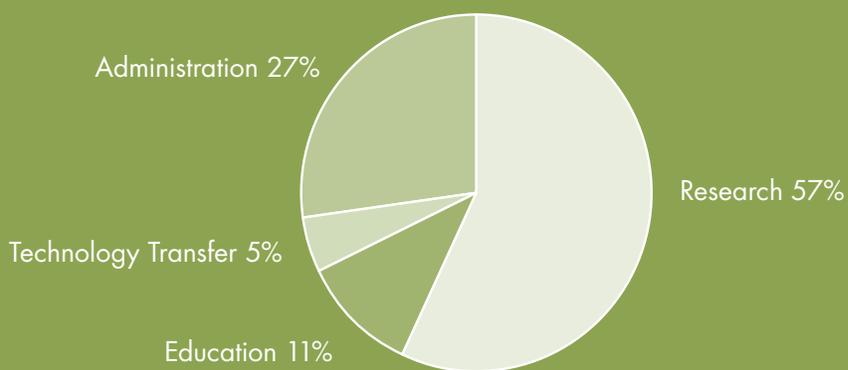
Funding Sources (Inception to September 30, 2009)

OTREC's funding sources include the federal UTC grant as well as matching funds from many sources, including the four universities in the consortium, the Oregon Department of Transportation and numerous public and private matching partners.



Expenditures (Inception to September 30, 2009)

Since its strategic plan was approved on December 1, 2006, OTREC has funded 80 research projects, 16 education projects and 13 technology transfer projects. Expenditures reflect our priorities in these three key areas.



New and Ongoing Projects

New Projects

Research

- 2010-299: Evaluation of Safe Routes to School Programs: Qualitative and Quantitative Analysis of Parental Decision-Making. Lynn Weigand, PSU and Noreen McDonald, UNC
- 2010-302: Impacts of Neighborhood Electric Vehicles (NEVs) on transportation infrastructure safety and regulation. Katharine Hunter-Zaworski, OSU and Lyn Cornell, ODOT
- 2010-305: Green and Economic Fleet Replacement Modeling. David Kim and J. David Porter, OSU and Miguel Figliozzi, PSU
- 2010-310: Incorporating New Data Needs into Travel and Activity Surveys. Jennifer Dill, PSU and Asha Weinstein Agrawal, SJSU
- 2010-318: Extraboard Management. James Strathman, PSU
- 2010-326: Wireless Data Collection System for Real-Time Arterial Travel Time Estimation. J. David Porter and David Kim, OSU
- 2010-327: Exploratory Methods for Truck Re-identification in a Statewide Network Based on Axle Weight and Axle Spacing Data to Enhance Freight Metrics: Phase 2. Christopher Monsere, PSU, Mecit Cetin, ODU, and Andrew Nichols, Marshall U
- 2010-335: Fusion and Integration of Arterial Performance Data. Kristin Tufte and Peter Koonce, PSU
- 2010-339: Durability Assessment of Recycled Concrete Aggregates for Use in New Concrete. Jason Ideker, OSU and Jennifer Tanner, UW
- 2010-340: Regional transportation and land use decision making: a multistate analysis. Richard Margerum, Robert Parker, and Terry Moore, OSU and Susan Brody, Gail McEwan, PSU
- 2010-345: Development of a Model to Predict and Mitigate Environmental and Public Health Impacts of Traffic Flows and Traffic Management Policies in Urban Transportation Microenvironments. Linda George, Miguel Figliozzi, and Christopher Monsere, PSU
- 2010-361: Tools for Gusset Plate Evaluation. Christopher Higgins and Michael Scott, OSU and Peter Dusicka, PSU
- 2010-370: A study of headway maintenance for bus routes: causes and effects of "bus bunching" in extensive and congested service areas. Miguel Figliozzi, Martin Lafferriere, and Wu Feng, PSU
- 2010-373: Green Schools in Gray Zones: Assessing Alternative Transportation & Land Use Credits of LEED® and non LEED® Rated K-12 Schools on Student Health & Academic Performance in Oregon. Ihab Elzeyadi and Marc Schlossberg, UO, Yvonne Michael, Drexel University
- 2010-383: Climate Change Impact Assessment for Surface Transportation in the Pacific Northwest and Alaska. John MacArthur, OTREC, Phillip Mote and Jason Ideker, OSU, Miguel Figliozzi, PSU, and Ming Lee, UA Fairbanks
- 2010-298: Development, Deployment, and Assessment of a New Educational Paradigm for Transportation Professionals and University Students. Ashley Haire, PSU
- 2010-313: Electric Vehicle Charging Infrastructure Community Needs Assessment. Robert Parker and Juli Brode, UO
- 2010-317: designBridge: Integrating Transportation into Service Learning Design/Build Projects. Nico Larco and Juli Brode, UO
- 2010-357: Sustainable Cities Lecture Series 2009-2010. Mark Gillem, UO

Education

Technology Transfer

- 2010-320: Transportation Planning Through Mobile Mapping Technology. Marc Schlossberg, Ken Kato, and Nico Larco, UO
- 2010-323: Overlooked Density: Re-Thinking Transportation Options in Suburbia, Phase 3. Nico Larco, UO
- 2010-333: Expanding Development of the Oregon Traffic Safety Data Archive: Phase 3. Christopher Monsere, PSU
- 2010-347: A comprehensive roadmap for the development of low/no emission vehicle infrastructure in the Portland Metro Region. John MacArthur, OTREC, Peter Murchie and George Beard, PSU

Ongoing Projects

Research

- 2007-01: From Arterial to Asset: Examining the Role of the Multi-way Boulevard in Coordinated Transportation and Land Use Planning. Mark Gillem, UO
- 2007-30: Hurricane Wave Forces on Highway Bridge Superstructure. Daniel Cox, OSU
- 2007-37: Characteristics of Transitions in Freeway Traffic. Robert Bertini, PSU, Soyoung Ahn, ASU
- 2007-43: Factors for Improved Fish Passage Waterway Construction. David Sillars, OSU, Hamid Moradkhani and Trevor Smith, PSU
- 2007-53: Performance Enhancement of Bridge Bracing Under Service and Extreme Loads. Peter Dusicka, PSU
- 2007-79: Identify and Address Institutional Barriers Delaying Incident Clearance. Karen Dixon and Lei Zhang, OSU
- 2007-80: Evaluation of the Oregon DMV At-Risk Driver Program. James Strathman, PSU
- 2008-91: Evaluation of the Oregon DMV At-Risk Driver Program, Phase 2. James Strathman, PSU
- 2008-102: Operational Analysis of Transit Bus Collisions. James Strathman, PSU
- 2008-108: Empirical Observation of the Impact of Traffic Oscillations on Freeway Safety. Christopher Monsere, PSU, Soyoung Ahn, ASU
- 2008-115: Application of WIM Data for Improved Modeling, Design, and Rating. Christopher Monsere, PSU, Christopher Higgins, OSU, Andrew Nichols, Marshall University
- 2008-130: Value of Reliability. Robert Bertini, PSU, David Levinson, U of M
- 2008-131: Oregon Freight Data Mart. Miguel Figliozzi and Robert Bertini, PSU
- 2008-133: Freight Distribution Problems in Congested Urban Areas: Fast and Effective Solution Procedures to Time-Dependent Vehicle Routing Problem. Miguel Figliozzi, PSU
- 2008-137: Dynamic Activity-Based Travel Forecasting System. John Giebe, PSU
- 2008-145: Assessment and Refinement of Real-Time Travel Time Algorithms for Use in Practice, Phase 2. Kristin Tufte, PSU, Soyoung Ahn, UA
- 2008-148: Seismic Damage State Models for Oregon Bridges. Peter Dusicka, PSU
- 2008-152: Overlooked Density: Re-Thinking Transportation Options in Suburbia, Phase I. Nico Larco and Marc Schlossberg, UO

- 2008-155: Instrumentation for Mechanistic Design Implementation. Todd Scholz, OSU
- 2008-156: Development of an Open Source Bridge Management System. Michael Scott, OSU
- 2008-154: Food Delivery Footprint: Addressing Transportation, Packaging, and Waste in the Food Supply Chain. Madeleine Pullman, Darrell Brown and Scott Marshall, PSU
- 2008-160: Long term Evaluation of Individualized Marketing Programs for Travel Demand Management. Jennifer Dill and Cynthia Mohr, PSU
- 2008-161: Hurricane Wave Forces on Highway Bridge Superstructure: Repair and Retrofit of Existing Bridges, Phase 2. Daniel Cox and Solomon Yim, OSU
- 2008-163: No More Freeways: Urban Land Use-Transportation Dynamics without Freeway Capacity Expansion. Lei Zhang, OSU
- 2008-176: Expanding Development of the Oregon Traffic Safety Data Archive. Christopher Monsere, PSU
- 2008-192: Evaluating the Effectiveness of the Safety Investment Program Policies for Oregon. Chris Monsere, PSU, Karen Dixon, OSU
- 2008-195: Freight Performance Measures: Approach Analysis. B. Starr McMullen, OSU, Christopher Monsere, PSU
- 2008-196: Access Management Best Practices Manual. Karen Dixon, OSU
- 2009-216: Overlooked Density: Re-Thinking Transportation Options in Suburbia, Phase 2. Nico Larco, UO
- 2009-221: Factors for Improved Fish Passage Waterway Construction, Phase 2. David Sillars, OSU, Hamid Moradkhani and Trevor Smith, PSU
- 2009-224: Healthy Communities and Urban Design: A Multi-Disciplinary National Analysis of Travel Behavior, Residential Preference, and Urban Design. Jessica Greene and Marc Schlossberg, UO, Daniel Rodriguez and Noreen McDonald, UNC
- 2009-226: Maintaining Safe, Efficient and Sustainable Intermodal Transport through the Port of Portland. David Jay and Jiayi Pan, PSU
- 2009-227: Evaluation of Bike Boxes at Signalized Intersections. Jennifer Dill and Chris Monsere, PSU
- 2009-229: Implementation of Active Living Policies by Transportation Agencies and Departments. Jennifer Dill, PSU, Deborah Howe, Temple University
- 2009-230: Exploratory Methods for Truck Re-identification in a Statewide Network Based on Axle Weight and Axle Spacing Data to Enhance Freight Metrics. Chris Monsere, PSU, Mecit Cetin, USC, Andrew Nichols, Marshall University
- 2009-232: Expanding Development of the Oregon Traffic Safety Data Archive, Phase 2. Chris Monsere, PSU
- 2009-239: The Effectiveness of Vertebrate Passage and Prevention Structures: a Study of Boeckman Road in Wilsonville. Catherine de Rivera, PSU
- 2009-242: Financing Mechanisms for Capacity Improvements at Interchanges. James Strathman, PSU
- 2009-243 A Novel Design Strategy for Integrating Freight Rail Into Urban Settings: A Capping Study. John Jeffrey Schnabel, PSU
- 2009-248: Value of Reliability, Phase 2. Robert Bertini, PSU, David Levinson and Kathleen Harder, U of M
- 2009-249: Improving Regional Travel Demand Models for Bicycling. John Gliebe and Jennifer Dill, PSU
- 2009-252: Hurricane Wave Forces on Highway Bridge Superstructure: Pseudo-dynamic Testing for Bridge Subassembly. Daniel Cox and Tim Maddux, OSU
- 2009-255: Calibrating the Highway Safety Manual (HSM) Predictive Methods for Oregon Highways. Karen Dixon, OSU, Chris Monsere, PSU
- 2009-256: Advisory Speed Safety Study. Karen Dixon and Ida van Schalkwyk, OSU
- 2009-257: Future Flooding Impacts on Transportation Infrastructure and Traffic Patterns Resulting from Climate Change. Heejun Chang, Martin Lafrenz and Miguel Figliozzi, PSU
- 2009-261: Combined Seismic Plus Live Load Analysis of Highway Bridges. Michael Scott, OSU
- 2009-269: Exploiting a Next Generation Intelligent Transportation Systems (ITS) Data Warehouse for Improved System Performance and Congestion Monitoring. Robert Bertini, David Maier and Kristin Tuft, PSU
- 2009-270: Seismic Hazard Assessment of Oregon Highway Truck Routes. Peter Dusicka and John Gliebe, PSU
- 2009-276: Analyzing and Quantifying the Impact of Congestion on Less-Than-Truckload (LTL) Industry Costs and Performance in the Portland Metropolitan Region. Miguel Figliozzi and Chris Monsere, PSU
- 2009-277: Analysis of Travel Time Reliability for Freight Corridors Connecting the Pacific Northwest. Miguel Figliozzi, PSU

Education

- 2007-02: City Design Lecture Series: Linking Transportation and Land Use Planning. Mark Gillem, UO
- 2008-97: Closing the Gap: Developing a Transportation Curriculum for the Oregon Young Scholars Program. Carla Gary, Bethany Johnson and Chuck Kalnbach, UO
- 2008-126: Bicycle and Pedestrian Education Program. Lynn Weigand, PSU, Jennifer Dill and Marc Schlossberg, UO, Karen Dixon, OSU
- 2008-144: Traffic Engineering Training for Rural Communities. Roger Lindgren, OIT
- 2009-223: Trail Planning & Community Service Curriculum. Lynn Weigand, PSU
- 2009-247: designBridge: Integrating Transportation into Service Learning Design/Build Projects. Nico Larco and Juli Brode, UO
- 2009-254: Rural Young Women Transportation Education Outreach. Roger Lindgren and Katie Edwards, OIT and William Mac Brock, National Park Service

Technology Transfer

- 22007-13: Developing a Coordinated Professional Development Program for OTREC. Robert Layton, OSU, Christopher Monsere, PSU
- 2008-138: Oregon Transportation Planning Experience. Carl Abbott, Samuel Lowry, PSU
- 2008-175: Increasing Capacity in Rural Communities: Planning for Alternative Transportation. Megan Smith, Keavy Cook, Bethany Johnson, OSU
- 2008-173: Options for Integrating Urban Land Use and Travel Demand Models. John P. Gliebe, PSU

Completed Projects

Research

2007-03: Socio-Economic Effect of Vehicle Mileage Fees. B. Starr McMullen and Lei Zhang, OSU

2007-14: Using Existing Intelligent Transportation Systems / Commercial Vehicle Operation (ITS/CVO) Data to Develop Statewide (and Bi-State) Truck Travel Time. Christopher Monsere and Robert Bertini, PSU

2007-20: Influence of Community Walkability and Safety on Active Transportation Among Low Income Children. Jessica Greene, UO

2007-33: Understanding and Measuring Bicycling Behavior: a Focus on Travel Time and Route Choice. Jennifer Dill, PSU

2007-45: Influence of Environmental Effects on Durability of Composite Reinforced Fiber Polymer (CFRP) for Shear Strengthening of Reinforced Concrete (RC) Girders. Chris Higgins, OSU

2007-57: Assessment and Refinement of Real-Time Travel Time Algorithms for Use in Practice. Kristin Tufte, PSU

2007-64: Improving Travel Information Products via Robust Estimation Techniques. David Maier and Kristin Tufte, PSU

2007-68: Co-evolution of Transportation and Land Use. Lei Zhang, OSU

2008-81: Socio-Economic Effect of Vehicle Mileage Fees, Phase 2. B. Starr McMullen and Lei Zhang, OSU

2008-93: Analysis of TriMet Bus Operator Absence Patterns. James Strathman, PSU

2008-116: Understanding Driver Behavioral Changes Associated with Road User Fees. Anthony Rufolo, PSU

2008-134: Practical Approximations to Quantify the Impact of Time Windows and Delivery Sizes on Freight Vehicle Miles Traveled (VMT) in Urban Areas. Miguel Figliozzi, PSU

2008-147: Influence of Environmental Effects on Durability of Composite Reinforced Fiber Polymer (CFRP) for Shear Strengthening of Reinforced Concrete (RC) Girders Phase 2. Christopher Higgins, OSU

2008-184: Understanding School Travel: How Residential Location Choice and the Built Environment Affect Trips to School. Yizhao Yang and Marc Schlossberg, UO

2008-190: Using Archived Intelligent Transportation Systems (ITS) Data to Measure the Operational Benefits of a System-wide Adaptive Ramp Metering System. Robert Bertini and Chris Monsere, PSU

Education

2009-223: Trail Planning & Community Service Curriculum. Lynn Weigand, PSU

2009-264: Expanding Service Learning Models in Transportation. Robert Parker and Terry Moore, UO

2009-279: Bicycle and Pedestrian Design Curriculum Expansion Proposal. Lynn Weigand, PSU

Technology Transfer

2007-18: Active transportation, neighborhood planning and participatory Geographic Information Systems (GIS). Phase 1. Marc Schlossberg, UO

2007-21: Road Ecology Course and Seminar Series. Mark Sytsma, PSU

2007-41: Application of Load and Resistance Design Factor Design (LRFD) Principles for Deep Foundations in Oregon: Phase 1. Trevor Smith and Peter Dusicka, PSU

2007-51: Linking Experiential Learning to Community Transportation Planning. Robert Parker, UO.

2007-67: Initiative for Bicycle and Pedestrian Innovation. Jennifer Dill, PSU, Marc Schlossberg, UO and Karen Dixon, OSU

2008-98: Active Transportation, Neighborhood Planning and Participatory Geographic Information Systems (GIS), Phase 2. Marc Schlossberg, UO

2008-187: Distribution Logistics Course. Miguel Andres Figliozzi, PSU

2009-214: Transferring Geographic Information Systems (GIS) / Community-Based Transportation Assessment Tools Nationwide. Marc Schlossberg and Nico Larco, UO



2009 Transportation Research Forum

OTREC had a special opportunity to help host the 50th Annual Transportation Research Forum, held in Portland in March 2009. OTREC faculty partner B. Starr McMullen (left) of Oregon State University served as conference chair and OTREC sponsored the keynote speaker, Daniel McFadden (right), 2000 Nobel Prize recipient in Economics, who presented “Sociality, Rationality and the Ecology of Choice.”

Results and Impacts

PSU-OSU Faculty Team Boost the Highway Safety Manual

AASHTO, FHWA and TRB have combined efforts to develop a document similar to the Highway Capacity Manual known as the Highway Safety Manual (HSM). One of the most highly anticipated sections of the HSM addresses predictive methods that will provide science-based analytical procedures for estimating the safety of a road as well as possible modifications. Dr. Karen Dixon (OSU) and Dr. Christopher Monsere (PSU) serve as members of the TRB Task Force for the Development of the HSM. With support from OTREC, Dixon and Monsere have also undertaken their own research to calibrate these predictive methods to local conditions. Without calibration, the predictive methods can provide misleading recommendations that could result in inappropriate investment of safety funds. The calibration involves statewide crash data, road geometry information and traffic volume data. The major benefit of this research is that transportation agencies in Oregon will be prepared to use the HSM to its fullest potential.

UO planning students are rewarded for their work on a local transportation plan

The Community Planning Workshop (CPW) is an experiential learning program at the University of Oregon. Through partnerships with “client” jurisdictions around Oregon, CPW gives students the opportunity to learn by doing and to gain experience in the process. CPW was honored with the Program of Distinction by the Urban Land Institute of Oregon and Southwest Washington. With \$50,000 from OTREC and an equal amount from the City of Eugene, CPW students developed the City’s first Pedestrian and Bicycle Strategic Plan. The plan itself has had immediate impacts on the community. In the first year, 20 of the plan’s 82 recommended actions have been accomplished or initiated. The plan also benefited the student participants, one of whom commented, “The experience helped increase the confidence level I have in my work and myself. I learned the process of conducting a project start to finish and how to think through each step.” The student team also earned the Student Project Award for Contribution of Planning to a Contemporary Issue from the American Institute of Certified Planners. The project also yielded lasting benefits to transportation

educators. The team created two documents that aim to equip other communities to develop partnerships with their universities: “The ABCs of Community University Partnerships” and “Investing in the Future: Reflections on Linking Experiential Learning and Community Transportation Planning.” Both of these documents as well as other materials are available at <http://cscotrec.uoregon.edu>.

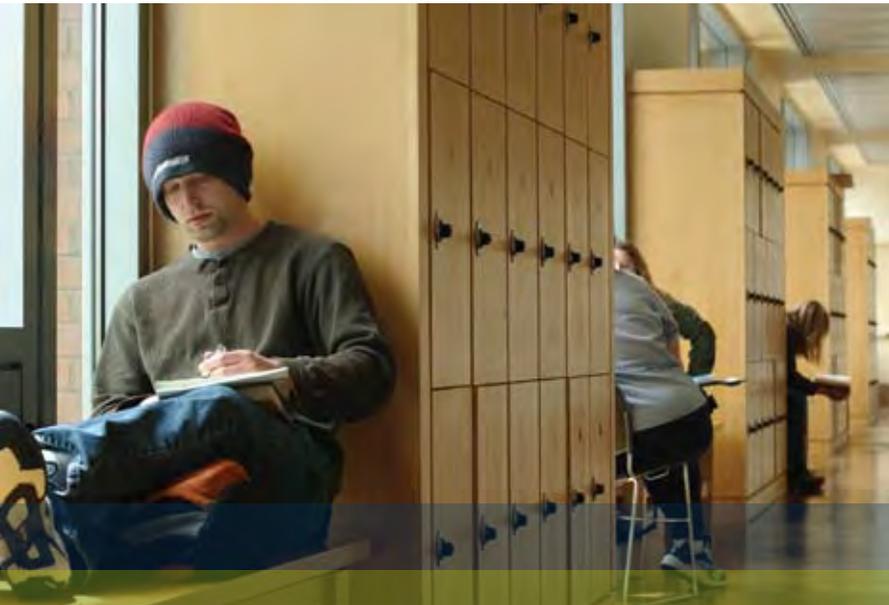


CPW’s transportation study team (l to r): Jeremy Sande, Terra Reed, Kate MacFarland, Rebekah Dohman and Sara Schooley with CPW director, Bob Parker. Photo credit: Mike Bray.

OIT offers an incredible introduction to transportation careers

In June 2009, Dr. Andrew Ray (Natural Sciences) and Dr. Roger Lindgren (Civil Engineering) led a four-day summer camp at Crater Lake National Park in Southern Oregon. Fourteen young women between 12 and 16 years old investigated pedestrian-vehicle interactions in scenic-area parking lots, context sensitive design techniques for roads and trails, aesthetic bridge design and addressing obstacles to fully-accessible trails. The campers also participated in traditional engineering challenges/games such as creating edible pavements (nuts and oatmeal for aggregate, hot fudge for cement), popsicle-stick bridges, and egg drops. The participants also met with a number of women who work on transportation issues with the National Park Service to talk about the many career opportunities.





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