



# PacTrans

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University Transportation Center Newsletter

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## PacTrans is Granted \$5.2M to Continue Serving as the USDOT Region 10 UTC

The U.S. Department of Transportation announced June 18 that the University of Washington will receive \$5.2 million in funding for the Pacific Northwest Transportation Center (PacTrans) to continue serving as the USDOT Region 10 University Transportation Center. PacTrans applies advanced technology solutions to help improve the safety of drivers, pedestrians, and bicyclists.

The announcement was applauded by U.S. Senators Patty Murray (D-WA) and Maria Cantwell (D-WA) who said "Considering the transportation challenges facing America, our country needs the innovative research being done by UW and its partner institutions to build a better legacy for our children."

Under the direction of Dr. Yinhai Wang, the center will focus on enhancing the safety of road users, transportation infrastructure and system operations in the Pacific Northwest. "Our center's role is not simply performing research; we also communicate with people, such as carrying out outreach programs to come to elementary and high schools," Wang said.

Local and regional agencies will match the federal funds, doubling the dollars for PacTrans research to \$10.4 million.

For more information, please refer to <http://dailyuw.com>.



*“Don’t be surprised to see four little cars zipping around campus soon. They are part of a new research project that aims to reduce the university’s carbon footprint, gather data and initiate more sustainability research among faculty members and students.” — UW Today, June 2014*



## UW Receiving Electric Cars for Research Projects

Dr. Yin Hai Wang of Civil and Environmental Engineering, Dr. Payman Arashahi and Dr. Daniel Kirschen both from Electrical Engineering, are the project leaders of a new University of Washington research project. The University and three other schools selected by Internet2 and Innova UEV, will receive electric cars to develop research projects devoted to sensing, energy, communications and transportation.

The UW is one of four institutions to receive four Innova Dash all-electric micro vehicles this summer. The cars, called “new urban electric vehicles,” will connect to the UW’s wireless network. Equipped with tablet-sized personal computers, they will be able to communicate data such as position, speed and battery charge directly to the UW’s network, providing information to various research projects.” These cars are great resources for PacTrans Research” ■

## PacTrans STAR Lab Performs at UW Engineering Discovery Days



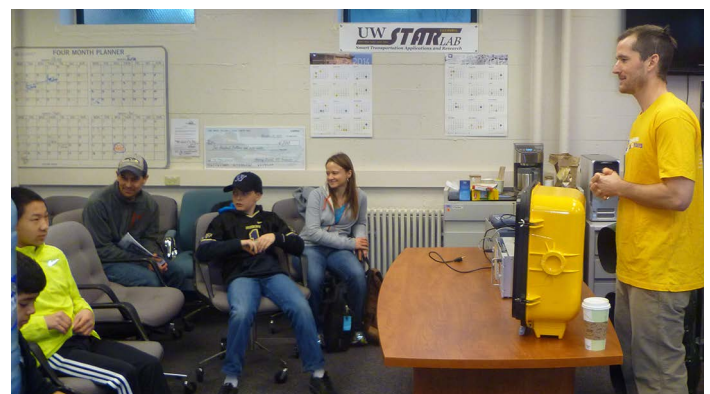
Traffic Hero game on with students!

PacTrans joined the celebration at UW Engineering Discovery Days. Engineers and scientists from across campus displayed their most engaging research and projects April 25-26. Nearly 9,000 students, parents and faculty attended the two-day event which was free and open to the public. PacTrans STAR Lab and other labs presented their research to people of all ages.

Highlights included a PacTrans research project which displayed an earthquake table used by struc-

tural engineers to test how structures will withstand earthquakes. This sort of testing is crucial to discover how a structure, such as a bridge, would perform during a major natural disaster.

The STAR Lab also demonstrated video-based pedestrian detection systems, controllers used for traffic signals. Students had fun with “Traffic Hero,” a game similar to “Guitar Hero” – players scored points by successfully using a detection system to locate cars. All of the players enjoyed the game while learning about transportation. ■



Learning about traffic signal controllers.

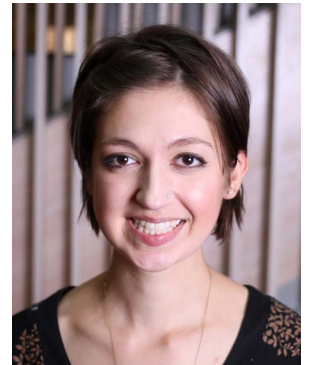
## Welcome Maria Bayya and Elysse Reyna

Two new PacTrans staff members are joining us this year!



**Maria Bayya** is PacTrans' new Assistant Director. She joined PacTrans in February 2014. She is a CPA and holds a degree in business administration. During nearly a decade with the University of Washington, she has served in many capacities, among them, Program Administrator at the Asian Law Center School of Law, Grants Manager at the Department of Psychology and Radiology, and Senior Accountant at Financial Services. She has worked as an accountant with several agencies and organizations including the Neptune Society, National Hispanic University, United States Navy Public Works Center and United States Naval Supply Depot. Maria's expertise is in the area of management; specifically grants and contracts, and finance.

**Elysse Reyna** is a higher education marketing communications professional who is passionate about highlighting great programs and people. Elysse comes to the UW Department of Civil & Environmental Engineering from North Seattle College where she helped launch the Continuing Education department entry into digital marketing. With bachelor's degrees in both business and psychology from the University of Washington, she is working towards completing her Master of Communication in Digital Media. Elysse is very excited to be working with PacTrans in her role as Civil and Environmental Engineering Communications Manager. ■



*We look forward to working with all of you as PacTrans takes on exciting new challenges in research and transportation safety!*

## OSU Participated in the WTS Conference

PacTrans was visible at the WTS Conference this year participating as one of its many sponsors. Two of our very own Oregon State University graduate students, Allie Peters and Jennifer Warner, represented PacTrans at the WTS (Women's Transportation Seminar) Annual Conference held in Portland, Oregon May 14-16. At this international event,

tion Construction," "The Evolution of the Parking Lot," and "Communicating Technical Topics to Non-Technical Audiences". At an invitation-only VIP reception they networked with executive-level leaders in the transportation field, heard a keynote address by ABC News correspondent Cokie Roberts and listened to a panel discussion between the General Manager of



*Both students were incredibly inspired by the multitude of successful leaders attending the event and were proud to represent PacTrans.*

Allie and Jennifer represented PacTrans at the information booth, where they explained the goals of the consortium and highlighted research being conducted. They also attended technical sessions and workshops on topics such as "Women in Transporta-

tion Construction," the CEO of the Charlotte Area Transit System, the Deputy Administrator of the Federal Transit Administration, and the CEO/General Manager of the Massachusetts Bay Transportation Authority. ■

## Attending CUTC 2014 Summer Meeting



L-R: Denise Dunn, Grants Manager, UTC OST-R, with Maria Bayya.

This year, PacTrans participated in the CUTC 2014 Summer Meeting held in Lincoln, Nebraska June 2-5. Over 200 attendees from different University Transportation Centers across the country participated. It was a wonderful event that brought



L-R: Denise Dunn, Tamara Noble and David Block.

together transportation professionals, administrators and educators to discuss and share state-of-the-art ideas and methods to advance research, education and development in the transportation field. ■

## PacTrans at NATMEC 2014

North American Travel Monitoring Exposition and Conference (NATMEC) 2014 provides an opportunity for traffic monitoring professionals to exchange and share information related to the collection, management, and use of monitored traffic data in all applications.

This year's event, "Improving Traffic Data Collection, Analysis, and Use," was held at Swissôtel Chicago, Illinois from June 29-July 2. PacTrans' Kris Hen-

rickson, Yin Hai Wang and Mark Hallenbeck were among the presenters. Henrickson and Wang presented three topics, including "Opportunistic GPS Location and MAC Address Sensing for Pedestrian Data Collection." Hallenbeck spoke on "Key Issues from the Conference and Next Steps to Move the Traffic Monitoring Community Forward" at the conference closing ceremony. ■

## Remembering Michael Dixon



University of Idaho Civil Engineering Professor Michael Dixon suddenly and unexpectedly passed away of an apparent heart attack May 7, 2014.

"It is with great sadness that we learned of Mike's passing. He was in the prime of his career, he was a well-respected colleague and researcher and inspiring instructor, and his passing is a great loss to the university community. Our thoughts are with Mike's family at this difficult time," said Larry Stauffer, dean of the College of Engineering.

Michael Dixon was a professor in civil engineering at the University of Idaho since 2000 and a licensed professional engineer in Idaho since 2004. He was promoted to full pro-

fessor earlier this year. Mike earned his Ph.D. in Civil Engineering from Texas A&M University, and his master's and undergraduate degrees from Brigham Young University.

Mike was a vital part of the University of Idaho's transportation research team working within the National Institute for Advanced Transportation Technology (NIATT). Mike's research focused on emerging traffic detection techniques and technologies, intelligent transportation systems and transportation systems modeling. He was an active member of the Transportation Research Board's Committee on Highway Capacity and Quality of Service, and served in several leadership roles on that committee. He collaborated with a number of researchers from around the U.S. and was highly regarded.

He was widely published and was an acting principal investigator on several large research projects. His grant work in progress included: Improving Pedestrian and Bicycle Safety by Identifying Critical Intersections and Street Segments; Modeling Passing Behavior on Two-Lane Rural Highways: Evaluating Crash Risk under Different Geometric Configurations; and

Daily Travel Feedback to Encourage Eco-Routing.

Mike taught several key courses on transportation engineering and traffic systems. During his time at the University of Idaho he developed several online training modules and instructional software tools to help students better understand traffic systems design. He was also the current advisor to over 20 undergraduate and graduate civil engineering students.

Mike was both an avid cyclist and winter sports enthusiast and loved taking his family skiing in McCall. He and his children participated in the annual Seattle to Portland Bicycle Classic, one of the biggest recreational bicycle rides in the country. Mike and his family are members of the Church of Jesus Christ of Latter-day Saints. He is survived by his wife, Cecily, and their eight children.

Contributions can be made to the "Michael Dixon Donation" Zions National Bank. The fund is for his children's education. For more information you may contact Zions National Bank directly or Colin Campbell (brother-in-law) at (509) 715-9700. ■

# RESEARCH HIGHLIGHTS

## Data Collection and Spatial Extrapolation of Bicycle and Pedestrian Data

**Michael Lowry, assistant professor of Civil Engineering at the University of Idaho**

**Yinhai Wang, professor of Transportation Engineering and director of PacTrans and STAR Lab**

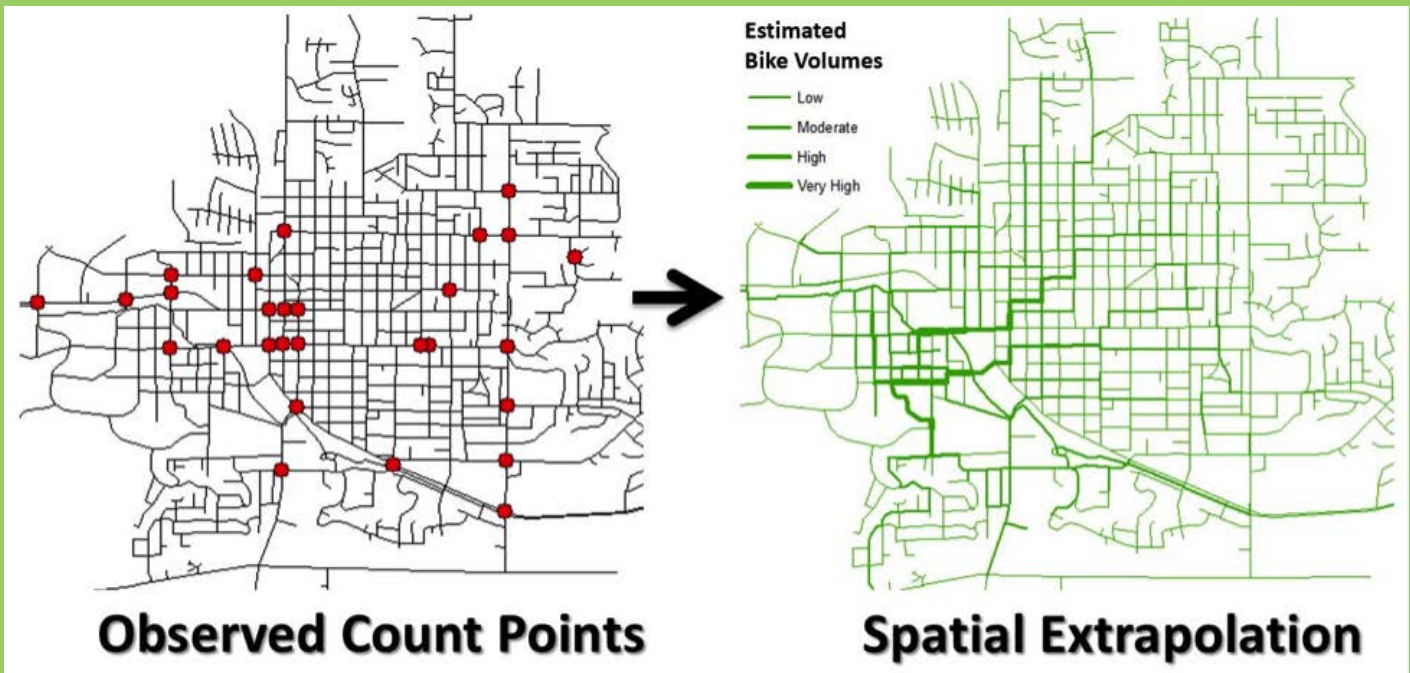
This project has developed a method to estimate Average Annual Daily Bicyclists (AADB) throughout a street network by spatially and temporally extrapolating observed two-hour bicycle counts that are collected through citizen-volunteer count programs.

The method can be used to compare different bicycle improvement scenarios. In addition, a framework has been created to compare improvement scenarios in terms of exposure to dangerous situations. This involves creating “dangerous situation metrics” through a public involvement process. For

example, in the case study a metric was devised to study a dangerous situation known as the “right hook” a situation in which a high number of bicyclists are going straight through an intersection and a high volume of vehicles are turning right.

The proposed bicycle master plan presented to the case-study community would decrease the right hook exposure metric by 5%.

These tools are being tested in Moscow, Idaho; Bellingham and Seattle, Washington. ■



Michael Lowry, Ph.D., is an Assistant Professor at the College of Engineering, University of Idaho focusing in the areas of Transportation Capital Investment Decision-Making, Planning for Pedestrians and Bicyclists, Assessing the Influence of the Built Environment on Travel Demand Models and Enhancing Education in STEM Fields..

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Yinhai Wang, Ph.D., is Professor at the Department of Civil & Environmental Engineering, University of Washington. His research interests include advanced traffic detection systems, large-scale traffic system modeling and analysis, traffic operations, intelligent transportation systems, traffic safety, traffic simulation, vehicle emission analysis, and e-science of transportation.

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# RESEARCH HIGHLIGHTS

## Bicycles and Pedestrians Research Projects

**Denise Bauer, professor of Mechanical Engineering at the University of Idaho**

**Richard Wall, professor at University of Idaho's College of Electrical Engineering and Computer Engineering**

The two projects "Second Generation Accessible Pedestrian Systems" and "A Framework for Improved Safety and Accessibility through Pedestrian Guidance and Navigation" build upon previous research to improve the pedestrian interface at intersections.

The Second Generation Advanced Accessible Pedestrian System (AAPS II) was developed to offer additional capability and performance of the original AAPS system now being manufactured and distributed by Campbell Company of Boise, ID. The internet interface provides an efficient mechanism to customize the AAPS operations and allows traffic agency personnel enhanced capability for assessment of APS performance. The second generation

hardware created a system where each pedestrian button can serve as an information center that can be used for non-contact pedestrian detection and tracking.

The second project on pedestrian guidance and navigation will use the AAPS in conjunction with a Smartphone and Bluetooth system to aid the visually impaired. The navigation device would alert pedestrians when they are about to stray into traffic, let them know how much further they have to reach the opposite curb, and, possibly give them information about the geometry of the intersection. The use of Bluetooth instead of GPS would allow the setup to then be used for indoor navigation. ■

Richard Wall, Ph.D. is a professor at University of Idaho's College of Electrical Engineering and Computer Engineering. His research focus areas are Distributed Processing, Power System Transient Modeling and Imbedded Precision Control.

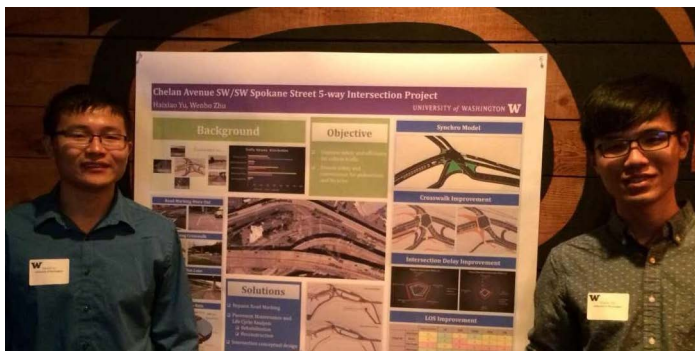
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Denise Bauer, Ph.D. is a research faculty member at the College of Engineering and Mechanical Engineering at the University of Idaho with a research area focus on Human Factors Engineering.

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## ITE Student Night 2014

This year's ITE Student Night held on April 18 brought together a good number of university students and local transportation professionals from the private and public sectors. The purpose of the



And the winners are! R-L Haixiao Yu and Wenbo Zhu.

event is threefold: (1) Watch and/or compete in the student transportation engineering competition (2) Mix and mingle with local transportation professionals, and (3) Eat as much salmon as possible! Seattle's famous Ivar's Salmon House hosted the celebration. To kick things off, three university teams competing in the ITE student night competition presented their



transportation improvement proposals. This year's competition called for improving a busy 5-way intersection in downtown Seattle for both motorized and non-motorized modes of transportation. Each of the three teams, two of which were from the University of Washington and one from Seattle Pacific University, presented unique and innovative designs which made electing a winner by popular vote a challenging task. Fortunately, given that there were three cash prizes awarded, everyone went home happy, not to mention full! ■

## PacTrans OSU Researchers awarded DDETFP Fellowships

Oregon State University School of Civil and Construction Engineering graduate students Dylan Anderson and Rachel Vogt have been awarded 2014 Dwight David Eisenhower Transportation Fellowships. The highly competitive national awards are given as part of the Dwight David Eisenhower Transportation Fellowship Program (DDETFP), established in 1991 to attract qualified students to the fields of transportation education and research, and advance transportation workforce development.

Advised by OSU associate professor Katharine Hunter-Zaworski, Anderson is developing a manual to improve safety at rail public transportation plat-

forms. The research, conducted under the Transit Cooperative Research Program (TCRP), will assist transit agencies to prevent and minimize public rail transit safety incidents.

Vogt, who is advised by OSU assistant professor Haizhong Wang, is working with the Oregon Department of Transportation to understand and address questions related to decreasing fuel tax combined with increasing infrastructure costs. As Oregon continues to explore a Road User Charge (RUC), her research will focus on how various rate structures and implementation strategies may impact different socio-economic groups and regions of the state. ■

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## Congratulations to Our Class of 2014 Graduates— We Wish You Well in Your New Endeavors!



R-L: Jonathan Corey, Ph.D., Erika Wygonik, Ph.D., Zun Wang, Ph.D., Menglin Wang, Ph.D.



## PacTrans Joins UW Paws-On Science at the Pacific Science Center

PacTrans was among more than 30 University of Washington research groups who participated in the annual Paws-On Science weekend April 4-6 at the Pacific Science Center in Seattle, WA. The ex-



hibit, titled “Red Light Green Light,” was co-sponsored by PacTrans and the STAR Lab, a University of Washington transportation research lab led by Dr. Yin Hai Wang.



Several PacTrans STAR Lab researchers volunteered to speak with families and school groups about safe and sustainable transportation research in the region. Interactive pedestrian detection and the Drive Net transportation data analysis, visualization, and mapping platform were among the highlights of the exhibit. This event was a great opportunity to engage the next generation of engineers and scientists in research and development at the UW through hands-on activities and demonstrations.

The Paws-On Science weekend was very well attended, with over 11,000 adults and children participating. ■

## PacTrans at University of Idaho: Clean Snowmobile Team

The UI Clean Snowmobile Team has led numerous tours of the garage and laboratories for visitors ranging from K-12 students to Boeing researchers. The team achieved Third place in the SAE Clean Snowmobile Challenge in March 2014 winning awards for: Best Performance, Best Design, Best Ride, and Best Handling.

The internship programs involve undergraduate students in research and are helpful in retaining undergraduates and recruiting the best graduate students. With several patents to its name, The Clean Snowmobile team continues to create new technology for a cleaner, quieter and more fuel efficient snowmobile. This technology is needed to support the winter economy in rural areas of the inland northwest and Alaska, and has shown that it is possible to maintain environmental excellence in pristine areas while permitting winter motorized recreation. ■



# PACTRANS REGIONAL SEMINARS

## Joseph Schofer Speaks on Politics and Planning

Joseph Schofer was at the University of Washington to give a talk entitled “Making Transportation Analysis Count: Bridging the Gap between Politics and Planning” on May 30 for the 2014 Spring Seminar. Around 50-60 people were in attendance, including transportation students, researchers, and professionals. Dr. Schofer gave suggestions of how to persuade politicians and members of the public to provide transportation projects funding, and explained the many factors that go into project funding decisions.

The political process can be a major hurdle in the advancement of transportation and the speaker illustrated his points using real-world proposals, including King County’s failed Proposition 1 and a proposed heavy rail flyover in a vibrant neighborhood on the North Side of Chicago. We would like to thank Dr. Schofer for making this PacTrans seminar an excellent and insightful experience for



all who attended.

For more information on Dr. Schofer’s presentation, please visit PacTrans website per link below:

<http://depts.washington.edu/pactrans/category/events/pactrans-seminar-series/> ■



Joseph Schofer is Professor of Civil and Environmental Engineering and Associate Dean for Faculty Affairs of the Robert R. McCormick School of Engineering and Applied Science at Northwestern University. His specialty is transportation and infrastructure planning, policy analysis, and the use of data and information for supporting infrastructure management decisions. Recently he has focused on long- and short-term decision making to address disruptions due to extreme natural events. He is a National Associate of the National Research Council of the National Academies and is actively engaged with the Transportation Research Board (TRB), having had nearly 40 appointments as member and chair of committees and conference planning units. He has chaired three NRC policy committees, and he currently chairs TRB’s Data and Information System Section and two conference committees on performance measurement. He is the 2011 recipient of TRB’s Roy Crum Award for outstanding achievement in transportation research, and he presented TRB’s Thomas B. Deen Distinguished Lectureship in 2014. Prof. Schofer is a member of the Advisory Committee

on Statistics for the U.S. Department of Transportation’s Bureau of Transportation Statistics, the Transportation Committee of the Chicago Metropolitan Agency for Planning, and the Citizens Advisory Board of Pace, (Chicago area Suburban Bus Board). As a part of his commitment to informing the public about the importance, operation, and challenges of American infrastructure, he hosts a technically-oriented podcast for which he has interviewed over 50 experts on various infrastructure systems (the [infrastructureshow.com](http://infrastructureshow.com)). At Northwestern, Schofer has served as Director of the Transportation Center, Chairman of the Department of Civil and Environmental Engineering, Interim Dean of Engineering, and Director of the Infrastructure Technology Institute. Prof. Schofer earned his B.E. degree in Civil Engineering from Yale, and his M.S. and Ph.D. in Transportation Engineering from Northwestern University.

## TransLink's Jeff Busby Talks at Transportation Graduate Seminar



Jeff Busby, Senior Manager, Project Development at TransLink in Vancouver, BC, spoke with University of Washington transportation graduate students on May 2. He gave a very interesting talk about how areas in Metro Vancouver are using transit stations

to stimulate better development and the relationship between development and transportation infrastructure.

This is important because Metro Vancouver is projected to grow by 50% over the next 30 years, meaning that there will be a 50% increase in the number of trips taken. TransLink hopes that the increase in trips will be entirely on transit, so they are assisting with ensuring that new development in Metro Vancouver is as transit-friendly as possible. This involves everything from designing station access to choosing which benches to install at stations.

The talk gave students an excellent opportunity to learn about issues in the transportation industry and how those issues are being solved. We would like to thank Jeff for speaking and providing a great experience for our students. ■

## Stephen Boyles Explores Uncertainty in Travel Demand Forecasts

Dr. Stephen Boyles from the University of Texas at Austin gave a talk to transportation students and faculty at the May 16 PacTrans-sponsored transportation seminar. Thirty people attended the presentation on uncertainty in travel demand forecasts. Typically, in hindsight, forecasts in travel demand appear to have been overly optimistic, which has often been attributed to planners' personal biases favoring certain projects. Dr. Boyles hypothesis is that this optimism may actually be due to random errors in

project evaluations combined with a deterministic project selection process. He has shown this to be the case by both theoretical deduction and computer simulations. Hopefully, his findings could lead to new forecasting methodology that isn't systematically biased. Also discussed was the need for distributions of predictions as opposed to an over reliance on point estimates. We would like to thank Dr. Boyles for coming and giving a highly informative talk about this cutting-edge transportation research. ■

# ABOUT PACIFIC NW TRANSPORTATION CONSORTIUM

The Pacific Northwest Transportation Consortium (PacTrans) is the Region 10 University Transportation Center (UTC) established in January 2012 with a \$6.89 million grant from the US Department of Transportation (USDOT).

PacTrans is a coalition of transportation professionals and educators from Oregon State University (OSU), the University of Alaska Fairbanks (UAF), University of Idaho (UI), University of Washington (UW), and Washington State University (WSU). With dual themes of safety and sustainability, PacTrans serves as an engine and showcase for research, education, and workforce development in the Pacific Northwest.

The goal of PacTrans is to create an environment where consortium universities and transportation agencies within Region 10 work together synergistically. The solutions that we develop will meet the needs of the region and provide direction for the five strategic goals of the U.S. Department of Transportation.

- Safety
- State of good repair
- Livable communities
- Environmental sustainability
- Economic competitiveness

The Pacific Northwest offers a unique blend of opportunities to examine a variety of transportation issues, including those related to urban centers, rural communities, diverse geographic features (e.g., coastal plains, mountain ranges), and a growing population of pedestrians and bicyclists. This diversity makes the Pacific Northwest a natural laboratory in which to investigate transportation solutions that are applicable both locally and nationally. PacTrans is dedicated to collaborating with transportation agencies, companies, and research institutions to jointly develop safe and sustainable solutions for the diverse transportation needs of the Pacific Northwest.

*The University of Washington serves as the consortium lead institution. PacTrans Center is located at More 112 on the UW campus. Dr. Yinhai Wang, professor of transportation engineering in the Civil and Environmental Engineering Department, serves as director of PacTrans.*

## A Note From PacTrans Board:

### **Our thanks to Clint Adler for his contribution, and a warm welcome to Carolyn Morehouse**

Clint Adler is retiring from the PacTrans External Advisory Board. We are grateful for the wonderful support and valued contribution he's afforded PacTrans, particularly in strategic planning and outreach with our consortium partner, University of Alaska, Fairbanks. We wish him the best in his future endeavors.

We are pleased to announce that Carolyn Morehouse has accepted our invitation to join PacTrans External Advisory Board and we're looking forward to her input at the upcoming EAB meeting on October 16 at the University of Washington.

Morehouse is the new head of the Research and Technology Transfer for Alaska's Department of Transportation and Public Facilities (ADOT&PF). She has worked for ADOT&PF for nine years, first as the Traffic and Safety Engineer for Southeast Region

and then as Preliminary Design and Environmental Group Chief. She came to headquarters in Fall 2012 to head the new Quality Improvement Section. This section has expanded to include Transportation Asset Management and Research and Technology Transfer.

Prior to ADOT&PF, she worked at the Alaska Department of Environmental Conservation where she helped create and manage the state's Cruise Ship Environmental Compliance program from its inception until 2005. Morehouse has also worked as a consultant and for private industry. She graduated from Clarkson University with a BS in Civil and Environmental Engineering and has an MBA from University of Alaska, Southeast. She is a registered professional engineer in the State of Alaska. ■

# PacTrans Board of Directors



**Yin Hai Wang, Ph.D.**  
*Director*  
University of Washington



**Chris A. Bell, Ph.D.**  
*Associate Director*  
Oregon State University



**Anne Vernez-Moudon, Ph.D.**  
*Associate Director of Education*  
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**Kenneth L. Casavant, Ph.D.**  
*Associate Director*  
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**Linda Boyle, Ph.D.**  
*Associate Director of Research*  
University of Washington



**Billy Connor**  
*Associate Director*  
University of Alaska Fairbanks



**Mark Hallenbeck, M.S.**  
*Associate Director of Outreach*  
University of Washington



**Ahmed Abdel-Rahim, Ph.D.**  
*Associate Director*  
University of Idaho

# PacTrans External Advisory Board



**Carolyn Morehouse**  
*Chief of Research, Development and Technology Transfer*  
Alaska Department of Transportation and Public Facilities



**Charlie Howard**  
*Director*  
*Integrated Planning*  
Puget Sound Regional Council



**Leni Oman**  
*Director of Research and Library Services*  
Washington State Department of Transportation



**Michael Bufalino**  
*Research Manager*  
Oregon Department of Transportation



**Wayne Kittelson**  
*Senior Principal Engineer*  
Kittelson & Associates



**Ned Parrish**  
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*Research Program*  
Idaho Transportation Department



**Scott Drumm**  
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Port of Portland  
Portland, Oregon



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Toyota Technical Center



**Jerry Whitehead**  
*Chairman*  
Idaho Department of Transportation

# SAVE THE DATE: PACTRANS EVENTS

Don't miss these upcoming PacTrans-sponsored events at the University of Washington!

More information will be sent your way as plans are finalized.

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## THURSDAY OCTOBER 16

PacTrans External Advisory Board Meeting

## SATURDAY, OCTOBER 18

Region 10 Student Transportation Conference

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### *Mark your calendars for*

*PacTrans Region 10 Transportation Conference:  
"The IOUs of Safety - Infrastructure, Operations,  
and Users"*

### **Friday, October 17, 2014 at the University of Washington**

*Join the Pacific Northwest transportation community for a time of networking, sharing research, and collaboration. Please see **www.PacTrans.org** for more details in the coming weeks.*

### **Contributors**

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Ahmed Abdel-Rahim, Associate Director, UI  
Chris Bell, Associate Director, OSU  
Mike Lowry, Professor UI  
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### **PacTrans.org**

