



TRANSNOW HOSTS GRADUATE STUDENT CONFERENCE



TransNow sponsored a conference on August 23, 2003 specifically geared toward graduate students. Ryan Avery, a Ph.D. student at the University of Washington, served as conference coordinator. The graduate student conference was timed to coincide with the annual ITE conference in Seattle, Washington, which began the following day. This first-ever graduate student conference—not open to faculty—

enabled attendees to learn about developments in the transportation field currently underway at other universities, while fostering a noncompetitive environment of open exchange among students from different universities. A total of 18 students from engineering and planning fields representing Oregon State University, Portland State University, and the University of Washington attended the conference, held in the Walker-Ames room of Kane Hall on the University of Washington campus. Nine topics were presented (see list below). The conference ended with a rousing match of Jeopardy® to test the participants' knowledge in a number of broad categories in the transportation and urban planning fields. With the success of the conference, we're hopeful that it can become an annual event!

Conference Presentations:

- **Ryan Avery, UW**, Development of a Length-Based Vehicle Classification System Using Uncalibrated Video Cameras
- **Janice Hamil, UW**, Is Seattle Hot for HOT Lanes?
- **Brant Lyerla, UW**, Effects of the Pay-Per-Use-Parking Program at the UW
- **Mike Rose, PSU**, Neighborhood Design, Mode Choice and Sense of Community
- **Sutti Tantiyanugulchai, PSU**, Analysis of Transit Buses as Probe Vehicles for Arterial Performance Measurement
- **Mike Tresidder, PSU**, Connectivity and Measuring the Street Network for Pedestrians and Bicycles
- **Rob Vance, UW**, Flexcar Seattle Program Evaluation
- **Xiaoping Zhang, UW**, Monitoring a Freeway Network in Real-Time Using Single-Loop Detectors: System Design and Implementation
- **Jianyang Zheng, UW**, The Performance of the GPS/INS Integrated System in Urban Areas
- **Other attendees:** Matt Baldwin (OSU), Paul Cholson (UW), Ken Hayashi (UW), Janet Hyde-Wright (UW), Ken Johnson (UW), Lin Lin (UW), Darren Muldoon (PSU), Johanna Weinstock (UW), Hong Zhu (OSU). ☞



Ryan Avery

XPACTOR GOES TO THE SMITHSONIAN



The roller simulator developed for the TransNow project “Transportation Infrastructure Design and Construction: Virtual Training Tools” has been selected for display in the Smithsonian National Museum of American History for the “America on the Move” exhibition. This exhibition begins in November 2003.



Joe Mahoney and George Turkiyyah at the University of Washington are Co-Principal Investigators for a research project that developed prototype 3D interactive computer-training environments for a major element of transportation infrastructure, hot mix asphalt paving. This

project builds on and complements projects that are supported by WSDOT and NAPA, and includes a suite of multimedia training tools covering various aspects of hot mix design and construction. These tools reflect the recent changes that have come about with the development and implementation of the Superpave mix design system, and the increased attention to hot mix construction details and quality.

For more information see the Smithsonian National Museum of American History website, <http://americanhistory.si.edu/media/pr030528.htm>.

The Xpactor software are available on the TransNow website in the “Publications and Final Technical Reports” section <http://www.transnow.org/>. In order to download this software users must be running Windows XP with a 3-D graphics card. The TransNow Final Technical Report TNW2002-05 is also available on the TransNow website in the Publications section.

Contact information: George Turkiyyah, UW, george@ce.washington.edu, 206-543-8741, or Joe Mahoney, UW, jmahoney@u.washington.edu, 206-685-1760. ☞

NEW PROJECTS FOR 2003-2004

Implementation of AVL Vehicles as Speed Probes for Traffic Management and Traveler Information in Addition to Performance Monitoring, 62-8989, Daniel J. Dailey, UW, dan@its.washington.edu

The objective is to refine existing methodology to automatically use transit coaches as probe vehicles to estimate freeway and arterial speed and travel time for traffic and traveler information, traffic management, and performance monitoring. This will be done by deploying a set of components to provide real-time travel time and speed measures widely available to researchers nationwide.

Virtual Training Tools for Transportation Infrastructure Construction, 62-8990, Joe Mahoney, UW, jmahoney@u.washington.edu

This project's goal is to bring cost-effective interactive 3D training environments to contractors and state agencies by developing and testing a second version of the XPactor training simulation software. The proposed enhancements will expand the capabilities of the software in order to create a virtual hot mix asphalt (HMA) paving construction site.

Improving Dual-Loop Truck (and Speed) Data: Quick Detection of Malfunctioning Loops and Calculation of Required Adjustments, 62-8992, Nancy Nihan & Yinhai Wang, UW, nihan@u.washington.edu, yinhai@u.washington.edu

This research develops an algorithm that calculates the difference in sensitivity of any two single loops that form a dual-loop detector and calibrates the sensitivities of single loops. In addition, researchers will develop a system that can tune up dual-loop detectors by incorporating the algorithm as its core component.

Documentation of User/Agency Benefits for Information-Based ITS Strategies, 62-8991, Scott Rutherford, UW, scottrt@u.washington.edu

This research develops a way to measure ITS information strategies with information now available or easily collected. The research will document methods used to justify transportation or other information-based schemes, develop a method for estimating the monetary benefits of transportation information technology, and implement the method developed for Objective 2 for an ITS transportation information system.

Improved Truck and Speed Data Using Paired Video and Single-Loop Detectors, 62-8988, Yinhai Wang and Nancy L. Nihan, UW, yinhai@u.washington.edu / nihan@u.washington.edu

The objective of this study is to develop a video image processing system for counting trucks, and a data fusion system that combines the video derived truck data and single loop measurements to improve the accuracy of speed estimation.

Urban Commodity Flow Data Collection and Analysis Using Global Positioning Systems, Thanit Puthongsiriporn, OSU, thanit@orst.edu

The project objective is to collect and analyze urban commodity movement data using Global Positioning System (GPS) receivers and evaluate advancing intelligent transportation systems (ITS) technologies as data collection tools that could supplement freight planning and modeling needs, through improved freight movement data attributes.

Techniques for Mining Truck Data to Improve Freight Operations and Planning, 922910, Task 10, Robert L. Bertini and Robert L. Fountain, PSU, bertini@pdx.edu

The project will design two data collection experiments using existing ITS infrastructure and equipment. Researchers will review the literature, develop comprehensive data sampling strategies, work with regional transportation agencies to define data needs, and implement a data collection experiment to demonstrate the capabilities of two existing ITS surveillance system for freight data collection.

An Analytical Model Supporting Intermodal/Port Facilities, 740710, Eric Jessup and Ken Casavant, WSU, jessup@wsu.edu / casavantk@wsu.edu

The project develops and applies an empirical model for examining alternative investment and operations scenarios for their impact on port and intermodal performance and viability. The research will review truck-rail, truck-berge and rail-berge facilities in providing transportation services to show the impact of alternative operations or investment policies on ports and intermodal facilities. 🏔️

NEW CONSORTIUM CENTERS

PSU CENTER



The Center for Transportation Studies, part of PSU's Transportation Initiative, was created in 2003. The CTS combines the former Transportation Studies Center and the Transportation Research Group, and will be headed by Professor Robert Bertini. Initial UTC seed money led to increased support for transportation research at PSU and funded Professor Bertini as a PI for several TransNow ITS projects. Over the last few years, Dr. Bertini's TransNow projects not only provided resources and support for PSU's CEE department, but also supported several graduate students in the Center for Urban Studies, leading to a stronger interdisciplinary relationship between the two PSU units. The initiative at PSU provides sustained funding for a new Center for Transportation Studies that merges activities of the two units. 🏔️

OSU CENTER

TransNow activities now fall under OSU's new Kiewit Center for Infrastructure and Transportation. The mission of the center is to make roads, bridges, ships, coastal development, and other transportation infrastructure safer. Just completed in 2003 and funded by a



\$4.8 million NSF grant, the new Tsunami Wave Basin is the largest in the world. The same floor built for tsunami

research is used for bridge research. Funded by a \$1.6 million ODOT grant, a team of faculty and graduate students tests the strength of bridge girders by simulating traffic loads and other forces. A third area of research is wireless miles, a concept in which states tax vehicle owners for the miles they drive instead of the fuel they consume. This fee might one day replace Oregon's fuel tax. 🏔️

TWO OUTSTANDING STUDENTS BECOME PI'S

ERIC JESSUP, WSU



My original interest in transportation and public policy research began after completing my masters' degree in Agricultural Economics at the University of Kentucky in 1993. I began searching for Ph.D. programs with an emphasis in transportation modeling, marketing, and public policy and ultimately chose to work with the nationally respected Dr. Ken Casavant in the Department of Agricultural and Resource Economics at WSU. Here I was introduced to a multitude of transportation research issues and projects, most notably the Eastern Washington Intermodal Transportation Study (EWITS). It was the EWITS project that ultimately shaped and funded my dissertation research. After graduation, my career made a brief turn away from transportation research and toward the financial services sector with American Express, Inc. I returned to transportation research in the fall of 2001. I am now Assistant Professor in the Department of Agricultural and Resource Economics at Washington State University. Along with teaching courses in Advanced Agricultural Marketing and Statistics, I'm involved in a variety of transportation research studies dealing with transportation optimization modeling, intermodal freight systems analysis and development of methodologies for identifying freight choke-points throughout the state transportation system. 🏔️

TOM KIMPEL, PSU



My fields of expertise include bus transit planning and operations, geographic information systems (GIS), and econometric modeling. My "specialty" is technical problem solving. I seem to be able to solve many of the problems that no one else can. I am quite adept at data conversion, manipulation, and integration. Linking intelligent transportation systems (ITS) data with GIS data often proves to be a formidable task given the multiple spatial and temporal resolutions of the source information. I try to keep abreast of new developments in spatial analysis and modeling. While many software applications are useful out of the box, real value can be added to research projects by taking the time to learn underlying programming languages, allowing tasks to be either customized, automated, or both. Current research interests include "location aware" portable devices utilizing GIS, and global positioning systems (GPS) in outdoor environments and 802.1x wireless technology (WiFi) indoors. Another field of interest involves visualization of ITS data for transit operations and planning.

I did not set out to become a transportation planner or academic researcher. My degrees range from environmental design to urban planning to urban studies. Each of my college degrees has involved elements of analytical problem solving and creativity/design. My Ph.D. topic (bus transit service reliability and passenger demand) dropped into my lap. My mentors and colleagues at the Center for Urban Studies have been instrumental in helping me mature as a transportation professional. It is a privilege to be associated with an academic unit that has a reputation for undertaking quality research. 🏔️



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TRANSNEWS

TransNow Website: The TransNow website has been redesigned. The site is easier to navigate and has a brand new look. Visit us at www.transnow.org/
TransNow Annual Report: To be on the list for the TransNow Annual report please send an e-mail to transnow@u.washington.edu.

New PSU Course: Sustainable Transportation—Pedestrian and Bicycle Issues

New UW Course: Freight Transportation

ITE QUAD Conference, April 2004: The conference will be held in Portland. See the Oregon ITE web site at www.oregonite.org.

ITS Oregon Workshop October 27, 2003. For registration and lodging information, visit <http://www.itsoregon.org/pages/ITSWorkshopBrochureOct03.pdf>.

Northwest Transportation Conference: Partnerships in Transportation is the theme for the February 10-12, 2004 conference, to be held at OSU. See <http://www.odot.state.or.us/tddresearch/NWTC/>

Port of New York Presentation: Yinhai Wang (UW) was guest speaker at the Strategic Planning Seminar of the Port Authority of NY & NJ in August 2003.

Prof. Nancy Nihan was elected to the Board of Directors of the Research and Education Division of the American Road & Transportation Builders Association (ARTBA) at their September meeting. This fast-growing division of ARTBA has 150 members with

a leadership group consisting of the division President, Vice-President, and six Directors.
TransNow Breakfast at TRB 2004. Students and faculty, past and present, are invited. Contact transnow@u.washington.edu.

Ken Casavant (WSU) An article in *Review of Agricultural Economics*, "Using Contingent Valuation to Measure User and Non-User Benefits: an Application to Public Transit," received Honorable Mention as the Outstanding Journal article of the year at the national American Agricultural Economics Association meeting in Toronto on August 8, 2003.

Robert Fountain (PSU), David Porter (OSU), and Tranit Puthongsiriporn (PSU) are new TransNow PIs. Watch for an introductory feature in May 2004.

Joe Mahoney (UW) received the 2003 Ronald D. Kenyon Award as the Outstanding Educator and Researcher, National Asphalt Pavement Association and is a co-author on the the K. B. Woods Best Paper Award from TRB.

Starr McMullen (OSU) In April 2003, Starr McMullen was elected to the National Board of the Transportation Research Forum.

George Turkiyyah (UW) is a co-author for the K. B. Woods Best Paper Award, TRB.

Yinhai Wang (UW) has accepted a position as Assistant Professor in the UW CEE Department.