



Research

Feds Select Western Transportation Institute to lead National Center

The Federal Transit Administration has awarded a \$1.5 million grant to the Western Transportation Institute at Montana State University to create and administer a transportation technical assistance center for public lands managers across the country.

The WTI Team will develop the National Technical Assistance Center for Alternative Transportation in Public Lands (TAC). The TAC will help managers at National Parks, Forests, Recreation Areas and other federal units who want to start or expand transportation projects such as shuttle services, bicycle and pedestrian trails, traveler information systems and traffic management improvements. "Federal Land Managers know that alternative transportation systems can provide environmentally sensitive solutions to challenges like traffic congestion, parking, and pollution, but they often need some help getting started," said WTI Director Steve Albert; "we want to give them a 'one-stop shop' of information, training and technical support."

Under the cooperative agreement with the FTA, the WTI Team will receive the \$1.5 million grant to initiate the center in the first year, with the option to extend for three additional years. Total available funding is estimated at \$4.5 million (subject to federal budget appropriations). Some of the services that will be developed and offered during that time include:

- Individual technical liaisons who provide person-to-person assistance
- A "Transit in the Parks" TAC Help Desk Website
- An online system to help managers identify grant opportunities and develop their proposals
- Syntheses of successful alternative transportation partnerships
- Training workshops delivered through both traditional and new media
- A mentoring program that promotes peer-to-peer learning

The WTI Team brings together public and private partners with extensive experience on transportation and public lands issues: Shapiro Transportation Consulting, LLC (STC), the Center for Urban Transportation Research (CUTR) at the University of South Florida, David Evans and Associates (DEA), the University of Vermont Transportation Research Center and Park Studies Laboratory (UVM), the University of Maine Parks, Recreation and Tourism, and Vanasse Hangen Brustlin, Inc (VHB). "We are excited to work with partners who have been at the forefront of many of the most innovative alternative transportation projects on public lands," said Albert; "together, we have "on-the-ground" knowledge at more than 80 federal land units across the country."

"This center will make it possible for federal land managers and others to develop better transportation alternatives within our National Parks and public lands," said FTA Administrator Peter Rogoff. "These

solutions will make it easier for our citizens to enjoy our national treasures while protecting our environment."

New Building; New Beginnings



With the promise of the ever-elusive Montana spring on the horizon, the month of April opened a new chapter of research potential at WTI. As building inspectors and construction crews began to disperse, WTI took occupancy of the newly constructed office building situated on the southern edge of the Montana State University (MSU) campus. The new space provides 27,000 square feet for project and administrative staff and laboratories complete with advanced communication infrastructure needed to further develop a new area of research.

The new infrastructure has researchers in the Systems Engineering Development and Integration Lab (systems) and Transportation Research Application and Instrumentation Laboratory (TRAIL) particularly excited and with good reason. These labs work closely together and, in the ever advancing world of technology, the new building capabilities will enable them to take on more innovative projects to help partners achieve success.

The roof top infrastructure in the new building was designed specifically with Systems lab needs in mind, with special networking so that CALTRANS staff can patch in directly to WTI without interfering with the MSU network. "This ability allows for excellent connectivity and provides the best use of services without negatively impacting other campus users," says Suzy Lassacher, WTI's Information Systems manager and Principal Investigator for TRAIL. Sitting on the roof of the new building is a 15 foot radio tower that will allow direct radio transmission from as far away as Belgrade, Montana. Both the TRAIL and Systems labs rely on radio communication for the data collection trailers, sensors, and video cameras that are deployed around the Gallatin Valley to monitor vehicle speeds, counts, and pavement conditions with the intention of enhancing safety. In the past, WTI worked with city and campus officials to obtain access permits to utilize campus towers. This step will no longer be necessary. The tower, with 24/7 access from WTI's roof, is yet another example of how the enhanced building functionality allows researchers to focus on application and technology. The building also provides dedicated spaces for temperature controlled control rooms for the network wiring. The TRAIL and Systems labs are



*WTI Researcher Larry Hayden
and WTI RF Communications Mast
(Photo by Neil Hetherington, WTI)*

strategically positioned adjacent to a control room with rooftop access to allow for new cabling and instrumentation to be added easily to the tower.

The Systems lab also includes fabrication space, housing tools for prototyping and fabricating mechanical and electronic hardware including printed circuit boards and sheet metal equipment enclosures and brackets. This in-house craft shop enables researchers to build rugged enclosures and mounting brackets for wireless and networking equipment and antennas for responder boxes that are used in the field. "We have space, we have technology, we have increased capabilities, but most importantly, we have people," says Doug Galarus, Program Manager for the Systems Engineering, Development and Integration Program. "We have experienced researchers who know how to use our new resources to their greatest potential." Innovation. Advanced technology. Skilled researchers. WTI is a trusted partner in creating the tools and finding the solutions necessary to make travel safer. To find out how to put the power of the systems or TRAIL labs to work for your organization's needs contact Doug Galarus dgalarus@coe.montana.edu (406) 994-5268 or Suzy Lassacher suzannel@coe.montana.edu (406) 994-6010.



*WTI Researcher Larry Hayden
and Responder Communications Box
(Photo by Neil Hetherington, WTI)*

The building was constructed with an eye towards sustainability. An example of sustainable construction are the countertops in the kitchen, copy room and class room which were developed by Doug Cross, WTI Research Associate for the Infrastructure Maintenance and Materials focus area. Cross has extensive experience developing innovative structural concretes made with byproducts and recycled materials. Notably, his work has focused on concretes made using only fly ash as the binder, and most recently, on using crushed glass as the aggregate in these concretes. Using this technology, Cross constructed the concrete countertops for the new building. This is also a great example of taking WTI research out of the lab and putting it to use-- practical solutions to real world problems. U.S. Senator Max Baucus will join WTI on August 19th for a ribbon cutting and open house.

If you would like more information on fly ash concrete and other sustainable research at WTI, please contact Doug Cross, (406) 994-7198, or doug.cross@coe.montana.edu.

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WTI studies drowsy and distracted teen driving

by Michael Becker, MSU News Service

Researchers at Montana State University's Western Transportation Institute (WTI) will use state-of-the-art video cameras to help teenage drivers stay safe on the state's rural roads. The new study will use automated in-car cameras to gauge the effect of Montana's drowsy and distracted driver's education modules on teen attitudes and behaviors behind the wheel.

"Distraction and fatigue are big issues with teen drivers," said Nic Ward, a professor of mechanical and industrial



engineering, and a researcher at the institute. "They're particularly bad for teen drivers in rural areas."

Western Transportation Institute researcher Nic Ward, right, and DriveCam representative Rusty Weiss display a camera similar to those installed in student drivers' cars as part of a drowsy-distracted teen driver study. (MSU photo by Kelly Gorham)

Nationally, teenagers are involved in four times more fatal car accidents than drivers aged 20 to 70, according to the National Highway Traffic Safety Administration. The risk for teens only increases on rural roads. According to the NHTSA, the fatality rate for teens driving in states with mostly rural roads, like Montana and Wyoming, is almost four times higher than for teens who drive on mostly urban roads.

"The more rural your state, the more of your teens are dying on the roads," he said. Ward believes the higher number of teen deaths on rural roads stems from a combination of road design, distance from medical help and a culture of potentially distracting activities and unsafe behaviors, such as using cell phones and not using seat belts. Ward and fellow Western Transportation Institute researcher Laura Stanley began preliminary work last fall. They purchased 40 in-car cameras from the San Diego-based company DriveCam and installed them into student vehicles. Each DriveCam camera is mounted near the rear-view mirror and actually contains two lenses, one pointing at the driver and another watching the road ahead. The cameras are always on, but save video only when triggered by the unit's g-force sensors, Ward said. Once triggered, the camera saves several seconds of video recorded before and after the traffic incident. This gives researchers a look at the situation surrounding a traffic incident, whether it be a quick swerve or a collision.

Ward said the in-car cameras provide a way to safely and unobtrusively collect data on teen driving behaviors and analyze changes that may be attributed to the driver's education lessons on distraction and fatigue. In later studies, these cameras may help parents and teachers support teens without restricting their freedom, and Ward hopes reviewing the video will help teens - and their peers who also see the videos - become better drivers. Stanley, who serves as research manager on the study, said MSU will be the first to evaluate a driver's education program using a "naturalistic" research method like the in-car cameras.

"Rather than using more traditional data collection methods like surveys, this allows researchers, parents and instructors to monitor the effects of a particular education module in the real world," she said.

Ward and Stanley's results will also be useful for other rural states that are looking to make their roads safer.

The study monitors students driving for three months spread out over an eight-month period, with the intervening time used for education and for studying the recordings. All the students involved are volunteer teens taking driver's education classes in Montana. The state Office of Public Instruction provided the institute with information about the driver's education curriculum and helped researchers make contact with students for the study, said David Huff, director of traffic education for the OPI in Helena.

"Distracted driving is coming up as a larger and larger issue with teens, especially with the explosion of technical devices, from cell phones to DVDs in the car to GPS systems," Huff said.

Montana's driver's education program has been around since the 1960s, making it one of the longest standing programs in the country, Huff said. The state updated the curriculum in 2005, but Huff said a dearth of research money over the past decade has hampered research into the effectiveness of driver's education curriculums nationwide.

"We have educators doing what feels good in their gut, but we don't have the ongoing evaluation for best practices because there isn't any research money," he said.

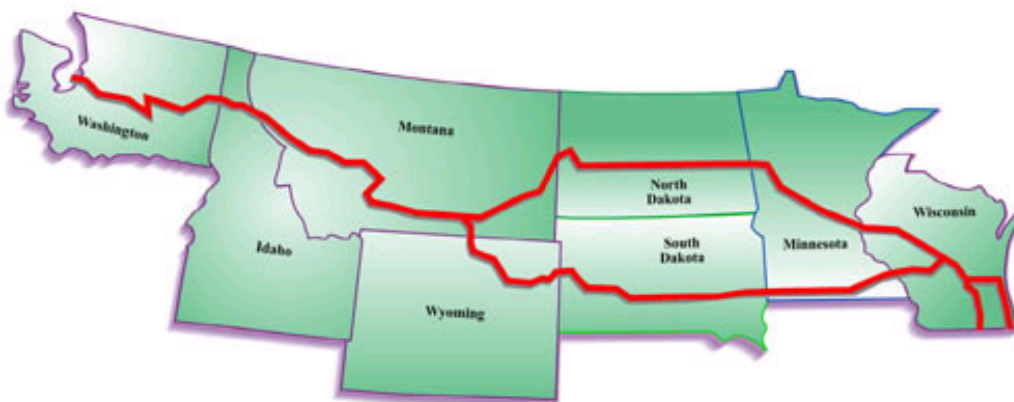
Huff believes the MSU study will help his office understand what parts of Montana's new curriculum are working and which parts need to be revised. The study has received \$175,000 from the National Highway Traffic Safety Administration and \$25,000 from the Montana Department of Transportation.

To Ward, the study is an opportunity for the Western Transportation Institute's work to make a difference in communities across Montana. "We're one of the largest six transportation centers in the nation, but we live and breathe rural," Ward said. "We live with the people we're trying to save."

Outreach

WTI Hosts 2009 North/West Passage Annual Meeting

In March, the Western Transportation Institute hosted the 2009 North/West Passage Annual Meeting at the WTI offices in Bozeman. Steering committee members representing state departments of transportation (DOTs) from each member state, Washington, Idaho, Wyoming, North Dakota, South Dakota, Minnesota, Wisconsin, and Montana, came together for two days to discuss and review the strategic plan, program direction, and current projects including the North/West Passage Traveler Information Website, regional permitting, and expanded corridor-wide truck parking facilities.



Bob Koeberlein of Idaho Department of Transportation and WTI's Steve Albert presented "Rural IntelliDrive: Modifying Driver Behavior through Risk Management and Pricing." Highlighting significant operational and travel-related challenges of the corridor, including 25% of all nationwide ice/frost fatal crashes and 1 in 5 of all nationwide fatal crashes caused by animals occur in NWP states, the presentation focused on improving rural safety risks using IntelliDrive to better inform drivers.



WTI Researchers Dan Richter and Shaowei Wang demonstrate a rural communications project for the steering committee members (Photo by Neil Hetherington, WTI)

"Enhancing traveler safety and roadway operations has been the cornerstone of WTI research since its inception. A pioneer in the development and deployment of Intelligent Transportation Systems in rural locations, WTI has recognized that incremental steps, institutional support, and multi-jurisdictional coordination are key elements for Integrated Active Transportation System (IATS) solutions," remarked Bill Legg, North/West Passage Program Chair following the IntelliDrive presentation. "The North/West passage Steering Committee recognizes that driver behavior adaption and in-vehicle technologies may address rural safety and reduce fatalities, we look forward to providing

guidance to WTI on this project."

Committee members were able to tour WTI's suite of laboratories and researchers were on hand to answer questions. This presented a unique opportunity for the participating states to see firsthand the resources WTI has on-site for advanced transportation research, including the Transportation Research, Applications, and Instrumentation Laboratory (TRAIL), the Driving Simulator Suite, and the TRANSCEND facility - all key components in the IntelliDrive development.

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WTI Undergraduate Research Experience Student to present at the Image 2009 Conference and Exhibition

It is not often that undergraduate students get the opportunity to present their work at a major conference. But Western Transportation Institute's Penny Atkins will get to do just that this July at the Image 2009 Conference and Exhibition in St. Louis, MO.

Through WTI's Undergraduate Research Experience (URE) Program, Atkins has been conducting research for The Design and Evaluation of a Pedestrian/Cyclist Sensing Device project. Using WTI's new state-of-the-art simulator, her research involved designing and testing an interface to warn drivers of a cyclist or pedestrian ahead. "This has been a great experience," says Atkins. "Instead of just reading research material all day, I am actually applying aspects of the research to discover a real solution."

The conference is hosted by the The IMAGE Society, Inc. a non-profit, technical, professional association for the advancement of visual simulation, related technologies, and their applications. Atkins will present during the Technical Paper Sessions.

WTI's Dr. Laura Stanley, who serves as Atkins' supervisor and mentor, says the Image Conference opportunity is significant on several levels. From a research standpoint, the presentation will be the first to demonstrate the capabilities and applications of WTI's new simulator to a broader public. From a mentor perspective, Stanley is energized by her student's success. "Inspiring students and getting them excited about research is key," says Stanley. "It is extremely rewarding to introduce students to an idea and then watch them run with it."

Atkins, from Belle Fourche, S.D, graduated from Montana State University this spring with a degree in Industrial Engineering. She has accepted a job with Bechtel Bettis in Idaho Falls, ID. "My time at WTI has been a rewarding experience which has opened my eyes to the challenges within the engineering discipline and the variety of solutions that can come from both academic knowledge and creativity."

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National Rural Summit on Traffic Safety Culture 2009

Attempts to make our transportation system safer cannot succeed by just focusing on the driver, the vehicle, and the environment. The cultural factors that define our values and govern our behavior must also be considered. Following this integrated approach, Montana State University and the Western Transportation Institute, along with the AAA Foundation for Traffic Safety, the Federal Highway Administration, and the Montana Department of Transportation hosted the first annual National Rural Summit on Traffic Safety Culture on June 22, 2009.

With beautiful and majestic Big Sky, Montana as the setting, over 60 safety researchers, practitioners, and policy makers gathered to increase their understanding and unify their concern about the role of traffic safety culture on behavioral factors and attitudinal barriers to public and political acceptance of traffic safety interventions. Presenters and panelists from University Transportation Centers, state departments of transportation, and research centers around the country led sessions defining culture, its influence on behavior, and its use to improve traffic safety.

"This conference really gave focus, definition and attention to one of the toughest highway safety challenges we face in this country," observed Joseph Toole, Associate Administrator for Safety, Federal Highway Administration. "As we look around the world and even in our own 50 states, it is apparent that there are places where people simply take greater personal responsibility for safety, and that is reflected in fewer deaths and injuries. In the USDOT, our hope is that we can learn from those examples and help others work toward such positive cultural changes."



*Montana Department of Transportation Director Jim Lynch answering a question from one of the Summit attendees
(Photo by Neil Hetherington, WTI)*

The summit led directly into the Driving Assessment Conference held June 22-26, 2009, also in Big Sky, Montana, allowing participants to maximize time and travel by attending both events. Building on the success of this inaugural summit, the next gathering is tentatively scheduled for July 11-13, 2011. For more information on the 2009 summit and for future conference updates, [please go online](#).



WTI hosted the attendees of the Driving Assessment Conference for dinner and tours of the WTI driving simulator laboratory (Photo by Neil Hetherington, WTI)

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Education

High School Students Explore Career Opportunities in Transportation

The Western Transportation Institute hosted sixteen high school students during the 2009 Summer Transportation Institute (STI) in June. The STI is a two-week intensive summer program that explores the interdisciplinary field of transportation and introduces participants to a wide range of careers and academic programs available to them after high school. The students live on MSU campus during the program and participate in a diverse curriculum that includes a variety of hands-on laboratories, design and build competitions, field trips, and guest speakers. No program fees or room and board are charged to participants thanks to a generous grant from the Federal Highway Administration and Montana Department of Transportation.



WTI Researcher Matt Blank shows students how to measure stream flow velocity.

The 2009 Summer Transportation Institute was very successful. The cohort was made up of students from all parts of Montana as well as New Mexico, Indiana, and California. Activities included:

- measuring speed data using radar guns and analyzing the data obtained using traffic simulation programs;
- exploring various reinforcement materials while building and testing soil retaining walls;
- making concrete and testing the effect different design mixes have on strength;
- taking local transit while learning about the importance of alternative modes of transportation;
- learning about structural forces and bridge design; and
- taking a discovery flight with instructors from Summit Aviation and the College of Technology in Bozeman.

Field trips included a ferry ride down the Missouri River, a tour of the Montana Department of Transportation headquarters in Helena, and a tour of the Gallatin airport. Students also participated in team design-build competitions, including balsa wood bridges and gliders. The activities allowed them to put into practice what they learned and then to test their own designs.

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Undergraduate Research Attracts Notice

The Undergraduate Research Experience (URE) program recruits 4-5 promising undergraduates each fall to pursue a research question over the course of the academic year together with a research mentor from the Western Transportation Institute. The students produce a research work plan, submit a final research report, and present their research to WTI staff and students at the end of the program. The program is designed to increase undergraduates' research, analysis, and communication skills and to build students' confidence regarding future graduate and research careers. Five undergraduates from four academic departments participated in the 2008-2009 URE program. All of this year's student research projects received special attention at various venues.

Two students were invited to present the results of their research to legislators and other state officials during a poster session at the state capitol rotunda in Helena. Andy Creighton, an undergraduate in Chemical Engineering, presented his Deicer Longevity Study. Andy worked with Winter Maintenance and Effects researchers Laura Fay and Dr. Xianming Shi in the WTI Corrosion and Sustainable

Infrastructure Laboratory. Benji Tornberg, a Civil Engineering undergraduate, presented his research titled "Performance of Reinforced Concrete made with Recycled Materials." Benji was mentored by Civil Engineering Professor Mike Berry.

Civil Engineering undergraduate Cody Glasnapp's research paper "Fuel Cost Parameter in Transportation Demand Models," was selected for the Institute of Transportation Engineers (ITE) District 6 best student paper award. District 6 is the largest district in ITE and includes thirteen western states. Civil Engineering Professor Pat McGowen mentored Cody during the program.



Prototype bicycle sensing device during actual road test.

Two students participated on a two-phase URE project "Design and Evaluation of a Pedestrian/Cyclist Sensing Device." For Phase I, Gordon Nelson, Electrical Engineering undergraduate, was mentored by WTI Systems Engineering and Integration researcher Gary Schoep to design and prototype a system using low power radios combined with GPS units to share location information between cyclists and motor vehicles. Penny Atkins, Industrial Engineering undergraduate, was mentored by Industrial Engineering professor Laura Stanley to complete Phase 2. She used WTI's new state-of-the-art driving simulator to design and test an interface to warn drivers of a cyclist or pedestrian ahead. Penny and Gordon jointly presented their project to the campus and local community during the 2009 Student Research Celebration at MSU. In addition, Penny successfully submitted and will present her research at the Image 2009 Conference and Exhibition in St. Louis, MO in July ([see Outreach section for more details](#)).

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New Projects

Science and Engineering Integrated Research Facility for Human Factors in Rural Traffic Safety

Project Objective: The purpose of this project is to better understand and address driver-related factors in rural traffic fatalities by expanding capabilities of WTI's current research facilities. Through a grant awarded by the M. J. Charitable Trust, WTI will instrument a vehicle fleet for naturalistic studies of rural traffic safety human factors and field tests of rural traffic safety interventions.

[Find out more »](#)

Channelized Right-Turn Lanes at Signalized Intersections: Traffic Control

Empirical Investigation

Project Objective: The ultimate objective of this research is to have a better understanding of the effectiveness of various traffic control devices that are used to regulate access at channelized right turn lanes. Towards this end, this research aims at screening the state of the art and the current practice regarding any guidance on the use of channelized lanes for right turns and the selection of appropriate traffic control for access regulation.

[Find out more »](#)

Laboratory Testing of Mixed Liquid Deicers and use of Multiple Performance Characteristics for Deicer Selection/Design - UTC

Project Objective: The objective of this project is to establish a decision making process to assess deicer performance and impacts, based on a robust set of laboratory testing procedures.

[Find out more »](#)

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RWIS Implementation Plan

Project Objective: The goal of this project is to document how the Alaska Department of Transportation developed and deployed its RWIS system, and to provide recommendations for its future use.

[Find out more »](#)

Highway 3 Transportation Corridor: Wildlife Management and Mitigation Assessment Project – UTC

Project Objective: Based on outcomes from the January 2008 AT THE CROSSROADS HIGHWAY 3 TRANSPORTATION CORRIDOR workshop, this project will develop a series of short and long-term recommendations for mitigating wildlife movement across the Highway 3 transportation corridor, specific to individual species, local environment, and topography. This information will be provided to the British Columbia Ministry of Transportation and Alberta Transportation for implementation.

[Find out more »](#)

Mendenhall Spur Road: Improvements to Ease Vehicle and Pedestrian Congestion and Improve Visitor Experience

Project Objective: The purpose of this project is to analyze, design, and implement traffic management strategies that will enhance access to the Mendenhall Glacier Visitor Center (MGVC) while improving the visitor experience and safety.

[Find out more »](#)

Development of Design Charts for Unpave Roads using NAUE Geosynthetics (Phase 1)

Project Objective: The objective of this project is to develop a series of new design charts for NAUE geosynthetics used in unpaved roads based on mechanistic-empirical design principles.

[Find out more »](#)

Camelina Evaluation for Soil Amendment

Project Objective: This project aims to explore the potential uses of Camelina meal (*Camelina sativa*) for roadside applications, incorporated as a soil amendment or spread topically, to enhance native vegetation establishment and growth for highway reclamation projects.

[Find out more »](#)

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New Staff

Keith Fortune

Keith Fortune joined WTI this year as a Project Assistant focusing on anti-icing and deicing performance and corrosion inhibitor longevity research, and fly ash concrete. He is currently involved with an inhibitor longevity and deicer/anti-icer performance study which includes extensive field work at WTI's TRANSCEND testing facility in Lewistown, MT and laboratory analysis of field samples at WTI's Corrosion and Sustainable Infrastructure Lab in Bozeman.

Keith holds a B.S in Land Resources and Environmental Science with a minor in Soil Sciences from Montana State University. He has twelve years of professional experience in the environmental field including conducting remedial investigations and processes, implementation of comprehensive land reclamation projects, large scale project supervision, and Phase I and Phase II Environmental Site Assessments. He also has extensive experience in air, water, and soil sampling and analysis and regulations compliance.

Originally from Warner, New Hampshire, Keith and his wife and three dogs now reside in Livingston where they are remodeling their home. In his spare time he enjoys rock climbing, mountain biking and snowboarding. Keith can be reached at keith.fortune@coe.montana.edu.

Laura Stanley

In August of 2008, WTI welcomed Laura Stanley as a Research Scientist. Her research specialties include Human Factors, Ergonomics, Transportation Safety, Biomechanics, and Engineering Education. She also serves as an Assistant Professor in the Mechanical and Industrial Engineering Department at Montana State University (MSU).

Laura graduated from Virginia Polytechnic Institute & State University (Virginia Tech) with a B.S. in Industrial and Systems Engineering in 2000. She then attended Montana State University where she earned an M.S. in Industrial & Management Engineering. Following a few years in the private sector with IBM in North Carolina, she returned to MSU and earned a Ph.D. of Engineering. While working on her advanced degrees at MSU, she was awarded the Western Transportation Institute *Professional Advancement Fellowship* and was also recognized as Western Transportation Institute University Transportation Center *Outstanding Student of the Year*. In addition to numerous awards and scholarships she has received, Laura has contributed to more than 25 peer reviewed professional publications.

Originally from Abingdon, VA, Laura has lived in the Bozeman area since 2003. In her spare time she enjoys photography, skiing, mountain biking, and climbing. An avid traveler, Laura had the opportunity to visit Turkey in 2008 - she received a National Science Foundation Award that enabled her to attend *Women in Industrial Engineering Academia Workshop*, Turkey, U.S., and the Middle East. She can be reached at laura.stanley@ie.montana.edu.

John Summers

John Summers has joined WTI as the new Driving Simulator Visualization and Maintenance Technician. John will function as part of the technical team (researchers, faculty, students) for

operating the WTI driving simulator, one of a very few machines of this class with exceptional capabilities in the country. He will be and generating virtual environments/scenarios for visualization and experiment applications and will assist with the development and management of simulator operation procedures and maintain the hardware and software.

John's previous experience includes over 23 years with Motorola, primarily within the Corporate Research Laboratories. His research included artificial neural network hardware and software as well as other machine learning algorithms which Motorola applied to various fields, including driving assistance and handheld devices carried into the automobile. John was also involved in the design and build of four research simulator facilities. Over a period of 8 years he managed the day to day research operations of two of these facilities and the technical operations of a third.

John's professional interests include systems aspects of automotive simulation; simulator systems usability; simulator realism; data collection in simulated and real environments; efficient algorithm coding and various other software aspects. He has published in international conference proceedings in machine learning and automotive venues. John and his wife moved to Bozeman from Gilbert, Arizona and his hobbies include hunting, fishing and flying remote controlled model aircraft. John can be reached at john.summers@coe.montana.edu.

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