



NORTH DAKOTA STATE UNIVERSITY

HOUSE EDUCATION AND ENVIRONMENT DIVISION
REPRESENTATIVE BOB SKARPHOL, CHAIRMAN

HB 1020 UPPER GREAT PLAINS TRANSPORTATION INSTITUTE - AGENCY 627
GENE GRIFFIN, DIRECTOR

TUESDAY, JAN. 25, 2011

Upper Great Plains Transportation Institute

North Dakota State University

Vision: Excel as one of the premiere university transportation centers in the United States.

The Legislature created the Institute as part of NDSU in 1967 because of the critical role that the mobility of freight and people plays in an advanced society. Virtually all the important elements of society are dependent on an efficient and effective transportation system:

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| ✓ Education | ✓ Manufacturing |
| ✓ Health care | ✓ Service industry |
| ✓ Emergency services | ✓ Recreation |
| ✓ Agriculture | ✓ Global economy |
| ✓ Energy | ✓ Domestic competition |

. . . and the list goes on. It is doubly important for North Dakota because of our location and the nature of our economy; most of our commodities and manufactured goods are shipped out of the state and most inputs have to be shipped in from around the world. The key role that transportation plays in society is why it has a cabinet position in the U.S. executive branch why every state has a transportation department, and why a primary function of cities and counties is to provide transportation infrastructure. One of the challenges in developing and operating a transportation system is complacency as demands grow and as the system deteriorates. People tend to take it for granted. There are many other challenges that are involved in planning, developing, maintaining and operating a transportation system. These challenges are increasing in complexity as the field adopts more technology and linkages become more complex logistically. What's more, a convergence of transportation and communications is creating opportunities as well as challenges. It is impossible to separate the two. The institute was created to develop the knowledge and human capital to assist the private and public sector face these challenges.

Mission: The Upper Great Plains Transportation Institute develops future transportation practitioners and leaders; enhances the quality of life and economic opportunity for individuals; improves the economic viability and global competitiveness of businesses; and reduces transportation's environmental impact by improving the mobility of freight and people through research, education and outreach.

Research and Outreach Programs

- Advanced Traffic Analysis Center (ATAC)
- Agricultural, Energy, and Industrial Freight Center
- Department of Transportation Support Center (DOTSC)
- Mountain-Plains Consortium (MPC)
- North Dakota Local Technical Assistance Program (NDLTAP)
- Rural Transportation Safety and Security Center (RTSSC)

- Small Urban & Rural Transit Center (SURTC)
- Transportation Learning Network (TLN)
- Transportation Safety Systems Center (TSSC)

Academic Programs

- Ph.D. in Transportation and Logistics
- Masters of Managerial Logistics
- Masters of Transportation and Urban Systems
- Transportation Leadership Graduate Certificate

Upper Great Plains Transportation Institute at a Glance

9	Established program areas
18	Number of states where Small Urban & Rural Transit Center staff taught 6 three-day courses, 21 workshops/training sessions, and 18 individual presentations. In addition the staff provided training to dozens of bus drivers in North Dakota and South Dakota.
21	Number of classes offered in the past year and attended by 238 students.
25	Research publications published in 2009/2010 in addition to several refereed journal papers
47	Total number of graduate students enrolled in transportation-related programs, including 24 Ph.D. students; 16 masters students in the transportation option programs in agribusiness and applied economics and civil engineering; 5 in the Masters of Managerial Logistics Program; and 2 in the Masters of Transportation and Urban Systems Program.
138	Current UGPTI employees including 52 full-time staff members, 21 part-time employees, 39 undergraduate student employees and 26 graduate student employees.
510	Number of people who attended and provided input during NDDOT Transportation Public Input meetings hosted and facilitated by the UGPTI in 2010.
2,713	Practicing professionals who attended seminars, workshops and short courses offered via the Transportation Learning Network in FY 2009. During that time period, TLN held 67 training events for a total of 15,811 participant hours. Most participants were from DOTs in ND, MT, WY and some programming was extended to professionals in SD and MN as well.
7,275	Number of participant hours devoted to 33 North Dakota Local Technical Assistance Program training sessions in FY 2009. There were 33 sessions offered to more than 1,427 workers in state, local and private agencies.

UGPTI Future Directions 2011-2013

Ensure that the UTCP is re-authorized: The University Transportation Centers Program has played a critical role in the development of the Institute's program over the past 20 years. It is important to do whatever is possible to ensure that the program is continued in the transportation bill that will be considered by Congress this year.

Reauthorize SURTC and RTSSC: The Small Urban & Rural Transit Center and the Rural Transportation Safety and Security Center, programs which make important contributions to mobility, both were authorized and funded as part of SAFETEA-LU. This law expired September 2009 and every effort will be made to assure these programs are included in the new surface transportation bill.

Successfully re-compete for regional university transportation center: The Mountain-Plains Consortium (MPC), the Region 8 university transportation center sponsored by the U.S. Department of Transportation, is critical to the long run success of the UGPTI. Positioning the Institute and the MPC for winning the competition will be a first-order priority.

Create a new center for transportation applications in sensing, communications and programming: A modern well-managed transportation system will be dependent on sensing the environment and condition of infrastructure and other factors to enhance operations. The same is true of a cutting edge supply chain. The Institute is uniquely positioned to take advantage of the intellectual capital and facilities at NDSU to make advances in this field with the development of SMARTSe (Surface Mobility Applications Real-Time Simulation environments).

Continue to advance the TLN program: The Transportation Learning Network is poised to expand nationally and make even greater contributions to mobility through training for North Dakota and the surrounding region. New programming, more advanced delivery platforms and the latest technology will enhance the abilities of TLN to deliver.

Develop a transportation security and terrorism program: The U.S. transportation system is vulnerable to terrorism in both rural and urban settings. The Institute has a unique opportunity to establish a nationally recognized program. The UGPTI will work with local and state officials to develop a center that will conduct research to identify strategies and educate and train people to recognize weak points and take corrective actions.

Fully develop the Center for Waterway Freight Analysis: The Corps of Engineers has selected four universities to conduct economic analysis and manage waterborne commerce data - Texas A&M, University of Tennessee, Marshall University, and NDSU. The Institute has been assigned the upper Mississippi, Illinois and Columbia waterways, all of which are important to agriculture.

Expand the Advanced Traffic Analysis Center: There is a growing need to apply advanced traffic analysis and management techniques in small- and medium-sized cities so that they can avoid the longer-term problems of congestion and inefficiency. ATAC will adopt a strategy of adding value to these population centers by partnering with other universities, private sector companies and government to strengthen the program on a national basis.

Continue to develop the agricultural transportation research and outreach program: Although individual issues have changed, agricultural transportation issues are as important today as they were 30 years ago. Securing funding to address these issues has been the Institute’s greatest challenge. A continued effort will be made to fund USDA’s university agricultural transportation research and education program and identify other funding sources.

Improve marketing and partnerships of the transportation education program: Many potential students are not aware of the opportunities to study transportation at the graduate level at NDSU. Additionally, there seems to be a number of potential opportunities to partner with U.S. and foreign universities in transportation education. This effort addresses both of these issues.

Work with the NDSU administration to create a School of Transportation within the University: A school will provide a focal point for administering, managing, and marketing the transportation education program within NDSU. What’s more, it will symbolize the importance of mobility to our socioeconomic system, and promote interdisciplinary research projects and programs.

Secure funding for the Center for Transportation Studies building: Institute staff is housed in three separate buildings on the NDSU campus, limiting their ability to collaborate and share resources. Currently we do not have space to resolve this issue. Finding the remaining funds for a transportation center that will allow the UGPTI to add greater value to North Dakota will be of the highest importance. Other than to house the Institute, the transportation building will serve three major purposes:

- Serve as a symbol to show that transportation is equal in its importance to our socio-economic system as other disciplines with dedicated buildings such as engineering, the sciences, the arts, agriculture, etc.
- Provide a physical representation of the recognition of transportation as an accepted interdisciplinary academic field.
- Provide a home for developing the intellectual capital necessary to plan, construct and operate the transportation systems of the 21st century.

Executive Recommendation and Request

Although the executive recommendation for General Funds indicated in the budget summary below will not cover all of the administrative costs of the UGPTI, it will enhance its base budget and improve its ability to compete for contracts and grants. Although additional General Funds would allow the Institute to make an even greater contribution to North Dakota we respectfully request your concurrence with the executive recommendation.

	Base Level Budget	Adjustments	Appropriation
Total All Funds	23,326,992	742,969	24,069,961
Less Estimated Income	21,737,199	413,134	22,150,333
Total General Funds	1,589,793	329,835	1,919,628
Full-time Equivalent Positions	52.3	0	52.3

2009-2011 Highlights

SMARTSe program launched

UGPTI is implementing its Surface Mobility Application Real-Time Simulation environments (SMARTSe) program on the NDSU campus. The NDSU campus, the small urban setting of Fargo and adjacent agricultural and manufacturing corridors provide diverse settings to develop technologies, applications and processes leading to safer and efficient supply chains, infrastructure and vehicles. The SMARTSe network will host emerging sensing, wireless communications, and mobile computing technologies which will feed real-world data into theoretical models, computer simulations and databases. SMARTSe is envisioned as a universally interactive environment between people, vehicles and infrastructure. Applications will be centered on transportation and will include supply chain management and related aspects such as inventory control, automatic vehicle location, cold chain management. Intelligent transportation systems applications will include traffic management, passenger monitoring, bus routing, infrastructure management and data collection and warehousing. NDSU has consented to the use of its campus facilities and corporate partners have already installed equipment across Cass County to provide a communications backbone for this effort. The USDOT Research Innovation Technology Administration has invested \$500,000 in SMARTSe, but additional resources are needed for the program to reach its full potential.

TLN Revitalized

Keeping workers and keeping them up to speed and satisfied is difficult for state departments of transportation and other transportation related agencies – especially on the northern plains. Baby boomers are retiring and competition from the oil industry and warmer climates make it tough to hold on to workers. The UGPTI's Transportation Learning Network (TLN) is being revitalized to help DOTs in the region provide high-quality training on key topics at low cost. Established in 1994 as the TEL-8 communications network and using interactive video, the organization was a pioneer in providing distance education in transportation. TLN is again a pioneer in coupling technology like on-line instructional modules and internet video with precisely targeted topics. Learning management technology will assist in delivering training, monitoring learner achievement, and assessing program effectiveness. Alternative training programs will be used to deliver training in ways that work best for content, learners and the agencies. Emphasis will be placed on storing repeatable training for on-demand retrievable use. A system to catalog or access connections to other technical training resources such as NHI and the National Transportation Training Resource database is also being developed. The TLN is an interactive network linking the transportation departments in Montana, North Dakota, and Wyoming and the universities that make up the Mountain-Plains Consortium – North Dakota State University, Colorado State University, South Dakota State University, University of Utah, and the University of Wyoming.

Transportation Security and Counter-Terrorism Center Proposed

Given the critical nature of mobility to our socioeconomic system, protecting the mobility of freight and people is critical to U.S. security. The goal is to develop one of the nation's top academic programs in transportation security and counter-terrorism at NDSU. With a focus on transportation operations and infrastructure, this center would conduct research and outreach on current and future threats; critical vulnerabilities; and existing security protocols. A number of tactical-level efforts have been conducted by government and private industry, but few rigorous, theoretically informed, strategic-level examinations have been conducted. In terrorist attacks, transportation is both the vector and the target. Often vehicles and vessels serve as the means for perpetrating the attack. Also, because of their importance to personal and freight mobility, transportation is often the target. Securing transportation requires not only an understanding of transportation infrastructure and operations, but an understanding of perpetrators as well. This program will seek to develop a synergistic approach that will enhance the ability of both public and private sector entities charged with protecting transportation systems and infrastructure.

Creating a School of Transportation to be housed in a new Center for Transportation Studies building

Creation of an NDSU School of Transportation will consolidate and focus transportation-related education efforts at NDSU, enhancing the ability to attract talented students while allowing them to be involved in innovative research and outreach projects. The school and its programs would be housed in a Center for Transportation Studies building on the NDSU campus. The success of every field of study and human endeavor ranging from the arts to zoology would be sorely limited if it were not for transportation. The study of transportation and logistics systems includes disciplines such as economics, engineering, sociology, computer science, statistics and others. An academic school that brings those disciplines together would reflect North Dakota's commitment to transportation. A building to house that school would add prestige to this important field of study and create an atmosphere of innovation and creativity that will have positive implications for the transportation systems of the future.

Design work on the 67,000 square-foot building is complete and construction costs are estimated at about \$13 million. The UGPTI's Advisory Council has formed a building committee to explore options for raising funds for this project.

Agricultural Research

Estimating road investment needs for agriculture. Because of the importance of agriculture to the state's economy, UGPTI researchers studied the investment needs of roads used to haul agricultural goods to market. They analyzed changes in agricultural production and logistics and the importance of roadway investments to the distribution of crops produced in North Dakota. The study was based on a detailed crop production and distribution model. The estimated investment needed for county and local paved roads totals \$100.5 million annually on a statewide basis. Approximately \$59 million of these needs relate to agricultural haul roads. The remainder corresponds to other county and local roads. In addition, \$110 million are needed annually for local unpaved roads. Approximately, \$43.6 million of these needs relate to agricultural haul roads. The remainder corresponds to other local roads, especially township roads. Altogether, the total estimated statewide need is \$211.5 million per year, including \$100.5 million of paved road investment needs and \$110 million of unpaved road investment needs.

Wheat movement studied. Movement of Hard Red Spring Wheat to market from North Dakota has been transformed in the last 25 years by consolidation in both the grain and railroad industries as well as by a move toward larger trains. Researchers studied wheat movement to assess how competitive ND wheat is with other commodities and other parts of the country and to learn how transportation factors into that competitiveness. North Dakota has about 50 elevators capable of loading trains of 100 cars or more. The researchers found that grain movements gravitate to those facilities. Producers and country elevators have invested heavily in facilities and track which has been a big benefit to railroads. The ND Wheat Commission wants to see if they are getting the most competitive rates for that investment.

North Dakota grain movement. Researchers summarize grain movement reports from each elevator in North Dakota. Annual reports and monthly updates are used to encourage competition within the grain industry and to identify research needs and market trends.

Rail updates. The UGPTI provides the USDA with updated market and service information for the rail section of the weekly Grain Transportation Report.

Enhancing competitiveness. Staff determine how businesses and industries can apply logistics and supply chain management techniques to improve competitiveness and access to regional global markets. For example: an evaluation of truck configuration involved in moving the annual North Dakota and Minnesota sugar beet harvest resulted in \$2.3 million in shipper savings and about \$5.8 million in pavement maintenance.

Growing pains. Researchers are addressing transportation challenges posed by economic growth (more than a 90 percent increase in GDP in the last decade) and an increase in agricultural production (more than tripled since 1950). They are also evaluating and addressing stresses on the transportation system from the energy sector. North Dakota is now the fifth largest oil producing state and has growing biofuels and wind energy industries.

Intelligent Transportation Systems

Statewide and regional ITS architecture updates. An ITS architecture provides a framework for supporting ITS deployment by defining services, developing system requirements, identifying information flows, coordinating agency roles, and integrating functions across jurisdictional lines. Having a current ITS architecture is a requirement for receiving federal funds for ITS projects. ATAC has been a resource for the NDDOT and ND MPOs for developing and maintaining their ITS architectures. The update process is needed to reflect new ITS priorities and strategies, account for expansion in ITS scope, and allow for evolution and incorporation of new ideas.

ITS equipment/project evaluations. Transportation agencies install various types of equipment and systems to assist in their operations, maintenance, and planning activities. Typically, these agencies lack the time or resources to evaluate the effectiveness of these systems. UGPTI researchers have assisted the NDDOT in evaluating non-intrusive traffic detection equipment and fixed automated spray technology systems. The evaluations provide information related to limitations and capabilities of the technology as well as the cost effectiveness of the systems.

Study examines adoption of new technologies by transit systems. To assist individual transit agencies in quantifying the costs and benefits of a specific technology, demonstration projects have been conducted throughout the United States, many with the support of the Federal Transit Administration. At the same time, the U.S. Department of Transportation has expended considerable effort to support the advancement of Intelligent Transportation Systems (ITS) to increase the likelihood of success for transportation agencies in planning, developing, operating, and maintaining technology systems. These efforts have largely been successful, but in spite of this, there is little information available regarding which transit agencies have adopted which technologies or whether certain agencies are more likely to adopt particular technologies. UGPTI researchers surveyed small urban and rural transit agencies with the objectives of assembling a publicly available database on existing and planned use of technology by transit agencies that receive Section 5311 funding, calculating simple statistics on technology use, and rigorously investigating the relationship between agency and environmental factors that impact the adoption of technology. These data and findings will serve as valuable tools for policymakers and researchers involved with transit technology issues and projects.

Transit and Personal Mobility

Ride or relocate. In the face of an “aging tsunami,” a UGPTI study quantified the cost of riding transit in rural areas of North Dakota versus relocating to larger communities. Transit costs included capital costs, passenger fares, and operating costs. Relocation costs included rent, realtor fees and intangible costs related to quality of life. Finally the research quantified the cost of riding transit versus relocating to the eight largest communities in North Dakota: Fargo, Bismarck, Grand Forks, Minot, Dickinson, Jamestown, Williston, and Devils Lake. Overall, results indicated that the cost of assisted living was almost always higher than the other three alternatives. Homeowners without mortgages had the lowest costs followed by apartment dwellers and homeowners with mortgages.

Research assesses existing and needed community transportation for ND disabled. UGPTI is surveying people with disabilities across North Dakota via mail, phone, and the Internet. The survey asks questions about the ability of people with disabilities to make needed or desired trips, use of community transportation options such as buses, and unmet needs or difficulties encountered. With that information, state, regional, county and local public and private transportation operators and human service agencies will be able to assess their existing transportation services, identify gaps and needs, and plan improvements. Another goal is to create a survey instrument that could be used over time to assess progress in providing transportation for adults with disabilities in the state and could also be used by communities and states beyond North Dakota for collecting similar information.

Study examines how public transportation influences health care access. A new study is examining how access to public transportation influences access to health care in North Dakota. There is significant evidence that health care utilization is generally lower in rural areas compared to urban areas. These differences could be due to a number of reasons including the longer travel distances and fewer transportation options available for people in rural areas. If providing transportation to health services for those who lack it increases the utilization of these services, there could be cost benefits in terms of reduced need for emergency care and preventable hospitalizations. The study will measure the impact of public transportation on access to health care services in rural and small urban areas. It will attempt to identify areas where there is a demand for more public transportation and ways in which the service could be enhanced to improve access to health care. A survey is being conducted to gather data on how distance from health care providers impacts individuals' ability to access health care services, and how public transportation can improve their ability to obtain health care.

SURTC leads legislative study on coordination. More mobility for more people while making the best use of funds directed to transit is the focus of a study authorized by the 2009 North Dakota Legislature. Through an RFP process, the North Dakota Department of Transportation selected SURTC to conduct the study which includes establishing two pilot regional coordination projects in the state. The focus of the study is to identify ways that public transportation can be better coordinated to improve mobility for residents and assure that the limited federal and state money directed at transit is spent most efficiently. "This is not an effort to force transit providers to consolidate their services," notes SURTC researcher Jon Mielke. "It is an effort to identify ways that they can better work together to most efficiently use resources to reach the largest number of individuals." The study comes as federal funding agencies are continuing to encourage coordination among transit providers and human service agencies that provide mobility services to their clients. The legislation directed that pilot projects be established to look at two regions in the state: one with a city of more than 35,000 residents, and one with a smaller city. The goal is to identify both barriers to transit coordination as well as ways that transit-providing agencies could better coordinate their efforts. Researchers identified several approaches to transit coordination that could be employed in areas across the state. They also identified actions for the legislature to consider in regard to legislative changes that remove roadblocks to coordination or that enhance the ability of transit providers to work together.

Transportation Planning

Estimating road needs for oil development. UGPTI researchers developed a forecast of road investment needs in oil and gas producing counties of North Dakota over the next 20 years in light of the expected growth. They quantified the additional investments necessary for efficient year-round transportation of oil while providing travelers with acceptable roadway service. The focus was on roads owned or maintained by local governments—e.g., counties and townships. They identified approximately 12,718 miles of impacted unpaved roads. The projected cost of oil-related traffic on these roads is \$567 million over the next 20 years (from 2011 through 2030). When the unpaved and paved road costs are added together, the projected investment need for all roads amounts to \$907 million, which is equal to an average annual need of \$45.35 million over the 2011-2030 period.

Metropolitan Transportation Planning. ATAC houses the regional travel demand models of the three metropolitan planning organizations in North Dakota. As such, ATAC provides, maintains, runs and updates these models to support transportation planning activities. Researchers analyzed several corridors and interchanges to assist in designing improvements that will reduce congestion and improve safety. The analysis is also used in long-term transportation planning.

Cost-saving analysis. UGPTI researchers provided the engineering analysis for concrete pavement reconstruction design changes that resulted in a reconstruction savings of \$150,000 per mile. UGPTI also provided research for the development of an asphalt ride quality specification for new construction resulting in smoother, longer-lasting facilities.

National freight conference. The UGPTI and eight other university transportation centers planned and funded the Transportation Research Board summer conference in Minneapolis in July 2010. The conference addressed the U.S. DOT's Framework for a National Freight Policy. Collaborators also helped plan and organize a two-day track on multimodal freight and waterway transportation. A goal was to improve interagency planning and integration of waterway, rail and highway planning to increase efficiency and reduce congestion in key corridors. The more than 250 attendees included members of Congress, FHWA, FRA, MARAD, the U.S. Army Corps of Engineers, state transportation departments, ports, transportation operators and other stakeholders.

Safety

Commercial vehicle safety. UGPTI's Transportation Safety Systems Center develops and maintains software used by state and federal safety specialists nationwide at weigh stations and ports-of-entry for inspecting commercial vehicles. Additional software is used by safety specialists during on-site reviews of commercial carriers.

Measuring seat belt use. A total of 5,735 driver seat belt observations were collected at 152 sites across 23 rural counties. Overall seat belt use increased from 44.8% in 2009 to 46.8% in 2010. Seat belt use was found to be significantly different on rural highways and in rural towns. The statewide seat belt

use rates of 57.2% and 36.6% were estimated on highways and in towns, respectively. Seat belt use on the state's rural roads was found to be significantly less than the commonly reported statewide seat belt use rate collected previously. The results suggested that additional research is needed related to rural seat belt use. In addition, continued assessment of programs to increase local seat belt enforcement or awareness on rural roads is suggested.

A look at teen drivers. North Dakota teens have relatively high risk for crash injury and death. Analysis of a survey completed by 2,284 teens in the state shows age, driving exposure, driving experience, and demographics are interrelated factors in safety outcomes. The oldest teens are least likely to be consistent seat belt users. School grades are a strong demographic in teen driving safety – 80% of teens that reported A's in school report high seat belt use compared to 25% of teens that reported F's. The results suggest potential gains from educational efforts that may be directed at older teens and young males. Traffic safety programs designed to reach teens with low school grades may also provide positive results.

Older drivers and safety. Older drivers are a growing segment in North Dakota's driver population. The natural aging process brings about diminished visual, cognitive, and physical skills needed for driving tasks. Crash record analysis was conducted to highlight elements that may be used to reduce risk for older drivers. Results show that older drivers are at relatively high risk for crash involvement and injury considering incidence ratios and travel exposure. Among drivers 70 years and older, a significant increasing trend is found for driver error along with a declining trend in driver evasive maneuver in crashes. Findings may be used in vetting a combination of education, engineering, policy, and enforcement measures that can be used to reduce older driver risk for crash injury and death both in terms of crash involvement and injury severity.

Education

New degree programs launched. NDSU's Graduate School added new graduate programs for the 2009-10 academic year. The Transportation and Logistics Program, coordinated by the UGPTI, now offers two new graduate degrees and two new certificate programs. The programs focus on urban transportation systems; linkages between transportation, land use, the environment, emergency response, and logistical delivery systems; coordinated planning, operations and security; and the spatial dimensions of urban systems.

- The Masters of Science in Transportation and Urban Systems degree is targeted at students with strong research interests and capabilities who want to work in the fields of research or education.
- The Masters of Transportation and Urban Systems degree is targeted at mid-career professionals and other candidates who want to gain skills appropriate to their career without participating in advanced research.
- The Transportation and Urban Systems Certificate is a program designed to enhance working professionals' credentials in the transportation and logistics field.

- The Transportation Leadership Graduate Certificate is an online program designed to prepare future leaders of the transportation industry. This prestigious program is an initiative of the Regional University Transportation Centers.

Dissertation provides flood contingency plan. As emergency response officials in North Dakota pondered the possible evacuation of Fargo during the height of 2009 flooding, they looked to information developed by an NDSU Ph.D. student for guidance. Mohammad Naser was nearing completion of his dissertation on simulating emergency evacuations of small- to mid-sized cities. The basic scenario he used in his research was a levee breach in the flood protection system along the Red River.

Students earn award. Transportation and logistics doctoral students Chris Enyinda and Charles Briggs and Won Koo, professor of agribusiness and applied economics, received a best paper award during the Global Academy of Business and Economic Research international conference in 2009. Briggs and Enyinda presented the paper "The Role of Competitive Intelligence Leverage in Supply Chain Risk Management Strategy."

DriveSafety simulation project. In 2009 DOTSC information technology students began work with the NDSU psychology department and its Drive Safety driving simulator. The students are helping customize software for the project.

DOTSC jump starts careers. Since DOTSC was created in 2000, the center has employed 72 students. Twenty-eight of those students moved directly into positions at NDDOT. Another 28 others went to work with consulting or engineering firms. Other employers included state departments of transportation and the BNSF Railway. Currently there are 11 student design assistants in the engineering center. For the past several years, the students have developed construction plans for \$25 million to \$50 million of construction projects a year.

Lee inducted into NDSU Tapestry of Diverse Talents. Ph.D. student Eunsu Lee was inducted in December 2009. The award recognizes students, faculty, staff and alumni for the diversity and contributions they bring to NDSU. Lee, of South Korea, is an active member of the Korean Student Association, Bison Herald, and Association of Transportation and Logistics.

Student paper tops contest. Ph.D. student Eunsu Lee's paper, "Estimating trip diversion by using impedance in flooding regions," was one of the winners in the GIS-T Student Paper Contest. The paper was presented April 12, 2010, at the GIS-T Symposium in Charleston, WV. He won a paid registration to the symposium and a cash award. Lee's paper focused on travel patterns and transportation management with road and bridge closures due to the flooding.

UGPTI helps launch nation-wide leadership program. The Transportation Leadership Graduate Certificate is an online program designed to prepare future leaders of the transportation industry. The program, aimed at working professionals, provides training to help them improve performance and the expertise needed to advance within their organizations. The program is an initiative of the Regional

University Transportation Centers to provide graduate-level education to prepare the future leaders of the transportation industry. The program offers diverse classes online taught by leading faculty at some of the nation's premier universities. UGPTI helped plan and organize the effort. Courses were first offered Spring semester of 2010. NDSU is one of the premier institutions that will offer courses taught by graduate faculty.

Outreach

Meeting training needs. NDLTAP furnished 33 training sessions to more than 1,427 workers in state, local, tribal and private agencies for more than 7,275 participant hours in 2009. The training programs help agencies meet federal requirements. Recent initiatives include work zone safety and traffic control in work zones and new reflectivity requirements for traffic control signs. NDLTAP also distributed training material and technical information to local and tribal governments through direct contact or via a newsletter with more than 7,000 subscribers.

Asset management workshop. UGPTI hosted a two-day asset management workshop via video conference for tribal, municipal and county road agencies at 19 sites across the Upper Great Plains. The event had two primary goals: to learn how extensively asset management techniques are applied by road managers in the region; and to identify ways to help them implement principles of asset management. Presenters included staff from county road departments and municipal public works departments who detailed their efforts.

Workforce development summit held. The "Solutions Summit for Public Transportation Workforce Development" was held in Fargo at the Holiday Inn in September 2009 to bring together experts from across the country to exchange ideas and develop strategies to address the need for workers and leaders in public transportation. "The need for professionals in public transit could significantly hamper the industry's ability to meet the mobility needs of its clients," notes SURTC director Jill Hough. The goal of the summit was to bring together interested persons in public transportation to dialogue on workforce development needs and actions.

Traffic Safety Evaluations. More than 40 percent of fatal motor vehicle crashes in North Dakota occurred on local roads – the two-lane gravel and pavement roads that make up the bulk of North Dakota's road systems. The U.S. Department of Transportation indicates up to a third of those crashes could have been avoided if the roads, markings and signs were updated. The UGPTI is working with local cities, counties and tribal authorities to conduct "traffic safety evaluations" on crash-prone road segments to identify safety improvements. The idea is to implement low-cost improvements on road segments that local residents and road managers have identified as high-risk for crashes. One example: Barnes County Highway 21 which runs south of Valley City along the Sheyenne River. Resulting improvements included upgraded signs and pavement markings on several curves and the removal of vegetation to improve visibility.

UGPTI has role in U.S. DOT reauthorization tour. U.S. Secretary of Transportation Ray LaHood visited North Dakota as part of the U.S. DOT's Transportation Reauthorization Outreach Tour, one of six meetings across the country that brought together, federal, state and local officials, as well as transportation providers, users and other stakeholders. As part of the June 2010 event, UGPTI associate research fellow Jill Hough provided testimony on the importance of transit and mobility to the livability of rural areas. UGPTI director Gene Griffin moderated a panel discussion of state department of transportation directors from the region.