

Region 8

MOUNTAIN-PLAINS CONSORTIUM NEWS

PROJECT HIGHLIGHTS

Wyoming Rural Road Safety Program

The nation's rural roads are a critical link in the nation's transportation system, providing the primary routes of travel and commerce for the approximately 60 million people living in rural America. About 80 percent of the nation's roadway miles are in rural areas. Those roads are carrying growing levels of traffic and commerce, but often lack key safety features and experience serious traffic accidents at a rate far higher than other roads and highways.

Nationally, about 60 percent of traffic fatalities are rural, the majority of which occur on two-lane roads. Crashes in rural areas are more likely to result in fatalities due to a combination of factors including extreme terrain, faster speeds, more alcohol involvement, and the longer time intervals from the time of a crash to medical treatment.

To help counties identify high-risk rural locations and develop a strategy to obtain funding to reduce crashes on the top-ranked sections, the Wyoming LTAP Center developed the Wyoming Rural Road

Safety Program (WRRSP). Development of the program was funded by WYDOT and the FHWA and in cooperation with Wyoming counties.

Program guidance was provided by a Local Road Safety Advisory Group (LRSAG) with representatives from: WYDOT, Wyoming LTAP, Wyoming Association of County Engineers and Road Supervisors (WACERS), Wyoming Association of Municipalities (WAM), and FHWA. The pilot phase of the program involved data collection from Carbon, Laramie, and Johnson counties to provide the variation in traffic patterns, crashes, and populations found among Wyoming counties.

A five-step procedure was developed by the LTAP center and approved by the LRSAG. These five steps are:

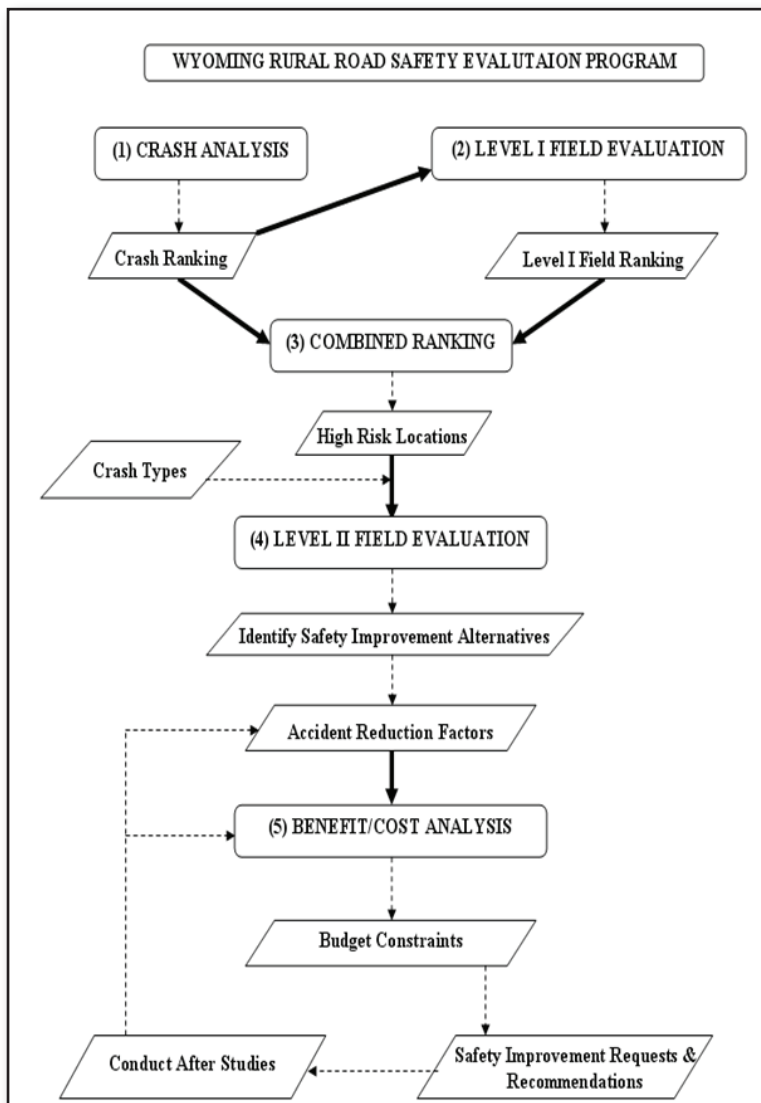
1. Crash data analysis
2. Level I field evaluation
3. Combined ranking to identify potential high-risk locations based on steps 1 and 2
4. Level II field evaluation to identify countermeasures
5. Benefit/cost analysis

(Wyoming Rural Road Safety continued on pg. 2)

This program utilizes the combination of historical crash records and field safety evaluations in identifying high-risk locations. A benefit/cost analysis can then be applied to determine the most cost-effective countermeasures at the high-risk locations.

The Wyoming LRSAG has recommended statewide implementation of the Wyoming Rural Road Safety Program. In addition, WYDOT and the FHWA Division office approved the WRRSP for eligibility to receive funding from the High Risk Rural Road (HRRR) Program.

Counties interested in applying for funding from the HRRR program must follow the methodology set out in the program. Requests from all Wyoming counties will be submitted to the Local Government Office of WYDOT. The Wyoming Safety Management System (SMS) Committee will select a subcommittee to allocate the funding from the HRRR program for eligible and cost-effective requests. The Wyoming LTAP Center developed training materials to demonstrate to interested counties how they can implement this safety program. The workshops were held Nov. 18 in Riverton and Nov. 19 in Douglas.



Read more detailed information on the program in the Wyoming LTAP Summer 2008 newsletter at <http://www.eng.uwyo.edu/wyt2/index.php?includefile=newsletter.html>.

Chase the Wind Transportation Safety Studies on I-70

If you've ever watched the movie, "Twister," you may remember those scientists who chased tornados using sensors floating in the air. CSU researchers recently chased strong winds along I-70 with various sensors. Professor Suren Chen and research scientist Juhua Liu, along with two graduate students in the Department of Civil and Environmental Engineering at CSU, have been working on a research project entitled "Traffic Safety Vulnerability Information Platform (TS-VIP) for Highways in Mountainous Areas Using Geospatial Multimedia Technology," which is sponsored by the Mountain-Plains Consortium.

The research team integrates an advanced 3-D ultrasonic anemometer for wind measurements, an NI mobile data acquisition system for vehicle dynamics, three accelerometers, and a GPS-based video mapping system (VMS) for collecting geospatial multimedia information of the interstate highway. The overall goal of the project is to develop a framework and Web-based platform of a "transportation safety vulnerability map" with traffic safety characteristics on feature points. A large SUV and a Penske truck were used for the field testing along I-70 as well as I-25.

I-70 is a perfect example of many interstates in the country which undergo complicated weather and topographical conditions. The adverse environmental conditions, such as wind gusts and steep grades, greatly threaten the safety of many vehicles and are blamed for many serious accidents.

The equipment used for the research includes an advanced 3-D ultrasonic anemometer for wind measurements, an NI mobile data acquisition system for vehicle dynamics, and a GPS-based video mapping system (VMS) for collecting geospatial multimedia information of the driving path.

The project, for the first time in the country, integrates the real-time dynamic wind and advanced geospatial multi-media field measurements with mobile testing on major

highways. The real-time wind and GPS multimedia data is to assess the environmental conditions of vulnerable vehicles, while the vehicle dynamic measurements are directly related to the varying vehicle accident risk at different locations on the highway. Based on the synchronized testing data and safety risk assessment, a GIS-based webpage is developed and put on the Internet.

The study will help transportation agencies and the trucking industry to identify those vulnerable locations on the highway during the planning stage and to study the causes and prevention strategies of high accident risks. The demonstration website includes the raw measurement data (e.g. mean wind speed and turbulence), corresponding safety risk index, and GPS-based video clip and still pictures at different locations along I-70

This MPC project is just the first step of a series of studies on traffic safety under adverse environments. Chen has recently secured funding from the Colorado Department of Transportation and the Mountain & Plain Education and Research Center (MAP-ERC) of the National Institute for Occupational Safety and Health (NIOSH) to further study large truck safety on I-70.

Students Use GIS to Evaluate Freight Corridor

Many North Dakotans drive over several bridges each day. Commercial vehicles carrying vital farm, petroleum, and manufactured goods cross these bridges as well.

Load limits, narrow lanes, poor approaches or limiting vertical and horizontal clearances are some of the restrictions commercial vehicles come across on a daily bases.

NDSU students, along with Upper Great Plains Transportation Institute staff members Subhro Mitra, Alan Dybing, Kurt Johnson, and Denver Tolliver, are implementing a project to extend the

(Freight Corridor continued on pg. 4)

(Freight Corridor continued)

capabilities of the North Dakota GIS model in hopes of addressing these problems for freight movers in the Northern Tier Freight Corridor.

The Northern Tier Freight Corridor includes Washington, Idaho, Montana, North Dakota, Minnesota, and Wisconsin.

The six PhD students involved in the project have been broken into three subgroups. Monsure Ahmed, and Qing Liu will focus on administrative tasks. Khalid Backkar, and Poyrz Kayabas will focus on supply estimation capacity issues, and Lei Fan and Eunsu Lee will focus on demand estimation.

Staff and students will also address the growing concern of whether the nation's freight transportation system will be able to keep up with the expected growth of the economy within the next 20 years.

After extensive evaluation of the current system as well as a projection of the freight demand of the next 20 years, the group will recommend a plan to address capacity issues.

RESEARCH PROJECTS

Colorado State University

- MPC-275 Z-Spike Rejuvenation to Salvage Timber Railroad Bridge Members (3rd Year)
- MPC-276 Use of Salvaged Utility Poles in Roadway Bridges (3rd Year)
- MPC-278 Bus-Stop Shelters-Improved Safety (3rd Year)
- MPC-291 A New Generation of Emergency Escape Ramps (2nd Year)
- MPC-301 Sustainable Concretes for Transportation Infrastructure
- MPC-302 Enabling Innovative Steel Plate Girder Bridges: Simple Made Continuous
- MPC-303 Seed Project–Beneficial Use of Off-Specification Coal Combustion Products to Increase the Stiffness of Expansive Soil-Rubber Mixtures
- MPC-304 Feasibility Study of mobile Scanning Technology for Fast Damage Detection of Rural Bridge Using Wireless Sensors

North Dakota State University

- International Summit on Agricultural and Food Truck Transportation
- 2nd Vision Safe Drive: Regional Rural Transportation Safety Conference
- Regional Pavement Management Workshop for Asset Management
- Inland Waterway Transportation Conference
- MPC-308 Phase I: Pilot Project to Develop Rural Youth Occupant Protection Education Platform
- MPC-309 Rural Road Signage: Simulated Driving to Evaluate Low-Cost Safety Improvements for Older Drivers
- MPC-310 Evacuation Modeling for Small- to Medium-Sized Metropolitan Areas
- MPC-311 Forecasting Bridge Deterioration Rates and Improvement Costs
- MPC-312 A GIS Model for Bridge Management and Routing

South Dakota State University

- MPC-280 Evaluation of SRICOS Method on South Dakota Cohesive Soils (3rd Year)
- MPC-285 Structural Performance of Prestressed Self-Consolidating Concrete Girders Made with Limestone Aggregates (2nd Year)
- MPC-305 Jointed Plain Concrete (JPC) Design and Construction Review
- MPC-306 Optimization of Pavement Marking Performance

University of Utah

- MPC-288 Utah Department of Transportation Traffic Operations Center Operator Training (TOC) (2nd Year)
- MPC-313 Evaluation of LRT and BRT Impact on Traffic Operations in Salt Lake City Metropolitan Area
- MPC-314 Assessing the User Impacts of Fast-Track Highway Construction (ABC)

University of Wyoming

- MPC-286 Developing System for Consistent Messaging on Interstate 80's Dynamic Message Signs (2nd Year)
- MPC-287 Effectiveness of Using Recycled Asphalt Materials (RAP) and Other Dust Suppressants in Gravel Roads (2nd Year)
- MPC-307 Maximum Velocity and Shear Stress in Flow Fields around Bridge-Abutments in Compound Channels
- Implementation of the Mechanistic-Empirical Pavement Design Guide (MEGPD)
- Implementation of the Wyoming Rural Road Safety Program (WRRSP)

WORKSHOPS & PRESENTATIONS

Second International Summit on Agricultural & Food Truck Transport Set

More than 100 policymakers, researchers, industry representatives and others attended the 2008 International Summit on Agricultural and Food Truck Transportation in Washington, DC, Dec. 2-3.

The summit provided a venue for the trucking industry and agricultural and food transportation organizations to discuss critical issues facing them internationally today. The 2008 summit emphasized global issues and aspects of agricultural distribution and commercial agricultural transportation. Most presentations and other details from the summit are available at www.agandfoodtrucking.org.

The 2008 summit was funded through a partnership of public and private organizations including: the U.S. Department of Transportation; the U.S. Department of Agriculture; the Mountain Plains Consortium; the NDSU Upper Great Plains Transportation Institute; the Agricultural and Food Transporters Conference; the American Trucking Associations; the transportation law firm of Scopelitis, Garvin, Hanson, Light & Feary; and other private sector associations and organizations.

More information on the summit will be included in the next issue of this newsletter.

CSU Researchers Present at Conference on Structures Under Shock and Impact

Colorado State University civil engineering professor Richard Gutkowski and student Chris Turnbull-Grimes attended the Tenth Annual Conference on Structures Under Shock and Impact to present research on crash testing roadway/safety barriers. Their presentation focused on the crash testing facility constructed at CSU in 2004. The facility allows manufacturers to test safety barriers for their vehicles prior to a full-scale federal testing. The site also allows

manufacturers to test structural adequacy of the barrier and post-collision vehicle trajectory. The facility is being upgraded to meet U.S. Department of State standards.

SDSU Biennial Geotechnical Conference

The South Dakota State University Biennial Geotechnical Seminar co-sponsored by South Dakota State University and the Mountain Plains Consortium will be held Dec. 5 at the Ramkota Inn and Conference Center in Sioux Falls, SD. Although a wide range of topics will be covered, sustainability and geosynthetics will highlight the seminar. Nationally renowned speakers will be coming from Minnesota, Georgia, Kansas, and South Dakota. The seminar is usually attended by about 125 engineers and scientists and will also be well-attended by vendors. The conference is coordinated by Allen Jones, associate professor of civil and environmental engineering at SDSU.

Preparing for TRB

Many of the researchers at the MPC universities are preparing to attend the Transportation Research Board meeting in Washington, DC, in January. The meeting program attracts more than 10,000 transportation experts from around the world and covers all transportation modes. MPC research will be represented among the more than 3,000 presentations in nearly 600 sessions. The University of Utah Traffic Lab submitted a record number of papers to the TRB – 10 papers in all.

Utah Traffic Control Research Presented

Aleksandar Stevanovic, research assistant professor of civil and environmental engineering at University of Utah, and Kameron Cergaye, a UDOT project manager and a PhD candidate at the University of Utah, presented “An Evaluation of SCOOT and SCATS through Microsimulation” at the 10th International Conference on Applications of Advanced Technologies in Transportation in Athens (Greece) in May. The

paper, whose author was also Peter T. Martin, a professor at the University of Utah, represents the first side-by-side comparison of the two most widely deployed Adaptive Traffic Control Systems in the world – SCOOT (Split Cycle Offset Optimization Technique) and SCATS (Sydney Coordinated Adaptive Traffic System). The paper compared SCOOT and SCATS performance on a suburban arterial in Park City where frequent recreational and artistic events justify implementation of adaptive traffic control.

Stevanovic also presented “Optimizing ASC/3 Signal Timings through SILS” at the Traffic Signal Systems Committee Summer Meeting, July 19-21, in Livonia, MI. In the invited presentation, he explained a recently developed concept of optimizing traffic signal timings from the field. Traditionally, traffic signal engineers needed to transfer manually signal timings obtained from signal optimization software. The concept of signal timings optimized through SILS enables a signal timing database to be downloaded from the field controller, optimized in microsimulation environment, and uploaded back to the field controller without further manipulation by engineers. The concept currently works only for signal timings used in ASC/3 Econolite controllers but it represents the first application where signal timings used in the field are adjusted by optimization software.

Sanders Presents Dust Control Research

Tom Sanders, associate professor of Civil and Environmental Engineering at Colorado State University, presented two papers from MPC-supported research on dust control.

He presented “Road Dust Suppressants: A Win-Win Solution” at the 2008 Mine Expo in Las Vegas, NV, in September. In November, he presented his paper, “The Colorado State University Dustometer-a Management Tool,” at the Road Dust Management Practices and Future Needs Conference in San Antonio, TX.

CSU Faculty and Staff Present Research

Colorado State University faculty and students presented several papers over the summer at professional meetings.

- Feng Chen and Suren Chen presented “Advanced Vehicle Stability Under Wind Gust” to the First American Association of Wind Engineers workshop in Vail, CO, in August.
- Suren Chen, Juhua Liu, Feng Chen, and Jun Wu were the authors of “Mobile Testing Scheme about Wind Measurement, Vehicle Dynamic Monitoring and Geospatial Multimedia Technology,” which was presented at the same conference.
- Feng Chen and Suren Chen presented “Vehicle Rollover Risk Assessment on Bridges Considering Environmental Impacts” to the First American Academy of Mechanics Conference in New Orleans June 17-20. Also at the conference, Suren Chen organized the symposium, “Performance Evaluation and Mitigation of Bridge Dynamic Effects,” and chaired three of its sessions.
- Jun Wu and Suren Chen authored “Traffic Flow Simulation Based on Cellular Automaton Model for Interaction Analysis Between Long-span Bridge and Traffic.” The paper was presented at the Inaugural International Conference of the Engineering Mechanics Institute, American Society of Civil Engineering ASCE, May 18-21. Chen also organized and chaired the structural control and health monitoring session and the bridge engineering session at the conference.
- Suren Chen was also invited to present “Research on Transportation Infrastructure System and its Relationship to Injury Studies” at the Colorado Injury Control Research Center in Fort Collins on Feb 28.

FACULTY ACTIVITIES

Selim Retires After 32 Years of Service

Ali Selim, Professor Emeritus of Civil and Environmental Engineering, retired from SDSU at the end of September 2008. Selim served on the faculty of the Civil and Environmental Engineering at SDSU over a period of 32 years, teaching and conducting research in the fields of transportation engineering and pavement. He also served as the SD LTAP director since it was established in 1988. A search committee has been established to identify qualified candidates for the position vacated by Dr. Selim.

Gutkowski Shares Research in Portugal



Richard Gutkowski

Colorado State University civil engineering professor Richard Gutkowski presented an overview of his ongoing MPC research on composite-wood concrete bridge systems at the University of Coimbra in Coimbra, Portugal. While there, he also provided advice and guidance for UC graduate students working on wood and bridge related research.

MPC Research Featured in Railway Age

Richard Gutkowski and a team from CSU were featured in the July issue of *Railway Age* for their work with railroad bridge restoration and maintenance. The MPC-funded research focused on strengthening rather than replacing the bridges because of expense and the decrease in accessibility of new materials. The study outlined in the July issue of the magazine focused on open-deck timber trestle bridges.

For the past five years, Gutkowski and Dr. Don Radford have been working on a bridge strengthening concept called Z-spiking which is adapted from the aircraft industry. Z-spiking

provides an alternative to the costly and unattractive fiberglass wraps that are currently used.

“If you have a horizontal crack in the member, for example, you can use off-the-shelf pultruded FRP rods and cut them into Z spikes,” Gutkowski said in the article. “You drill holes vertically down from the top or up from the bottom, then insert the spike after putting an adhesive in place.” Initial tests of this method showed a 50-100% increase in stiffness. The study also found that the more damaged the member is, the more effective Z-spike becomes. The research team reported a 200% increases in stiffness in a flood-damaged bridge in Texas. “The solution is one-fifth to one-tenth the cost of wraps,” said Gutowski. The repair method will be implemented in the field in 2009.

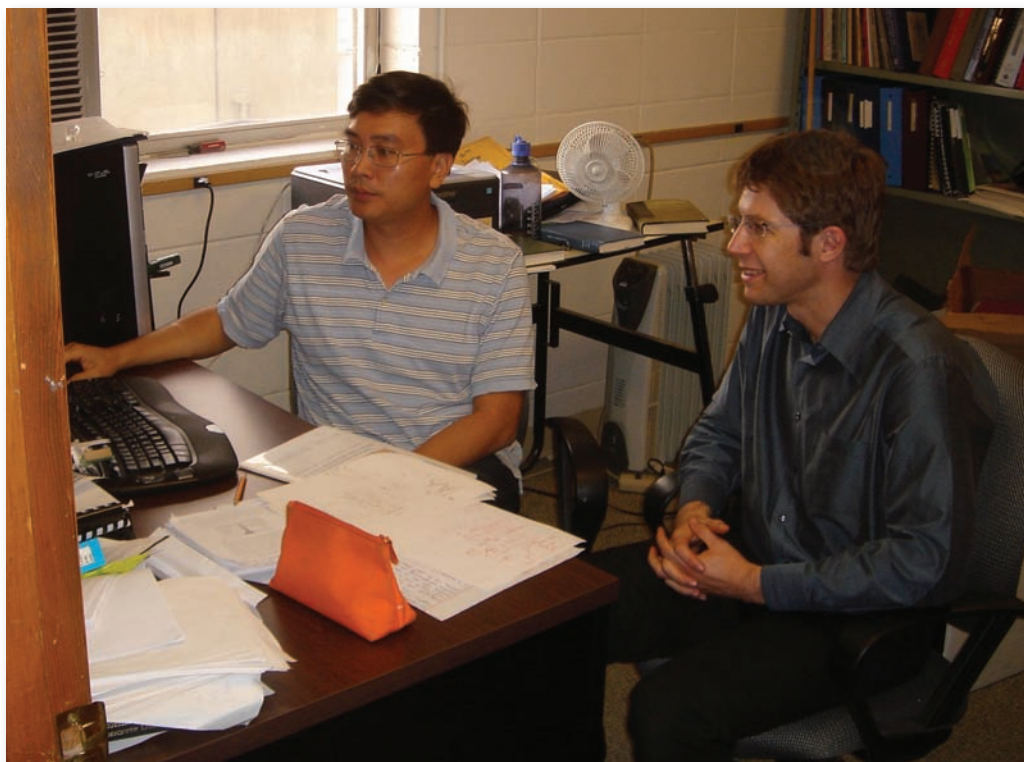
Railway Age is a railway and rail transit trade journal that features industry issues, new product information, and profiles of industry leaders.

Italian Structural Design Professor Visits

Massimo Fragiaco, associate professor of structural design, Faculty of Architecture, University of Sassari, Alghero, Italy, was a visiting scientist at Colorado State University from Aug. 29 to Sept. 5. Fragiaco is a cooperator in the research of CSU civil engineering professor Richard Gutkowski.

Gutkowski has received a grant from the Italian government to be a short-term visiting professor at the University of Sassari in spring 2009, where he will give lectures on his research on repair and restoration of timber bridges. Fragiaco serves on and participated in a meeting of the graduate committee for CSU doctoral candidate Giang Lam To.

He is working on rigorous computer modeling and experimental load testing of the long-term, time-dependent structural behavior of composite wood-concrete longitudinal deck bridges, research work supported by the MPC.



Visiting professor Massimo Fragiaco and PhD student Giang Lam To.



Visiting professor Massimo Fragiaco and PhD student Giang Lam To examine lab specimens.

STUDENT ACTIVITIES

Scholarships Awarded at NDSU

The UGPTI awarded four scholarships at its annual Awards Banquet Oct. 9. The \$1,500 scholarships are awarded each year through the Mountain-Plains Consortium with funding from the US DOT University Transportation Centers Program.

Andrew Bratlien and Jacob Loegering received Transportation Engineering Scholarships. The scholarships recognize academic achievement and promote the education of transportation students at NDSU.

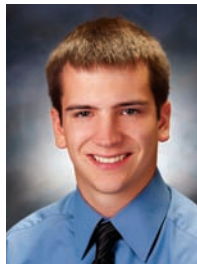


Andrew Bratlien

Bratlien is a senior in civil engineering from Laporte, MN. He is a graduate of Bemidji High School and the son of Harlan and Janet Bratlien. He is a member of the American Society of Civil Engineers, served as president and vice president of the NDSU chapter

of the Institute of Transportation Engineers, was treasurer of Tau Beta Pi, and served as president and secretary of NDSU residence hall government. While at NDSU, he received an NDSU Presidential Scholarship and was named to the NDSU Dean's List three times. He was also admitted to Tau Beta Pi, an engineering honor society. Students eligible for membership must be in the upper eighth of their junior class, and in the upper fifth of their senior class. Bratlien has been an undergraduate research assistant at the Institute's Advanced Traffic Analysis Center since March 2007. He assists in traffic data collection and analysis, simulation analysis, and transportation planning projects.

Jacob Loegering is a senior in civil engineering from Milaca, MN. He is the son of Roger and Susan Loegering. While in high school, he earned college credits from Northwestern



Jacob Loegering

College and St. Cloud State University. He is a member of the American Society of Civil Engineers, the Knights of Columbus, the Fellowship of Catholic University Students, and Collegians for Life. At NDSU, he has received Presidential Honor Award and was named to the NDSU dean's list for three semesters.

Kevin Buxa and Tyler Klain received Paul E.R. Abrahamson Scholarships. The scholarship is named in honor of Paul E.R. Abrahamson, the first administrator of the North Dakota Wheat Commission and a leader in the North Dakota agricultural community.

Buxa is a junior in agricultural economics from Harvey, ND. He is a graduate of Harvey High School and is the son of Stan and Julie Buxa. He is a member of the NDSU Agribusiness Club and is active in NDSU Intramural Sports. He was named to the NDSU dean's list for three semesters.



Kevin Buxa



Tyler Klain

Klain is a senior in agricultural economics from Ruso, ND. He is a graduate of Turtle Lake-Mercer High School and the son of Durnell and Darcy Klain. Before coming to NDSU, he attended Minot State University and also earned college credit from

Bismarck State College. At NDSU, he is a member of the Saddle and Sirloin Club, the Agribusiness Club, the National Society of Collegiate Scholars, Blue Key Honor Society, and is a nominee to the Phi Kappa Phi Honor Society. He is vice president of membership for Alpha Kappa Psi, a professional business fraternity. He has served as vice president and president of the North Dakota Junior Simmental Association and has been a counselor for Kamp KACE (Kids Against Cancer Everywhere). He has been named to the NDSU dean's list five times.

New Transportation and Logistics Student Organization Meets

A new student organization at NDSU, the Association of Transportation and Logistics, met for the first time Oct. 3.

The group will focus on examining solutions to transportation challenges based on logistic technology. The group will look at “optimal multi-location shipment management, multi-carrier management, consolidations, real time tracking/tracing, and automation of processes and security” said Peter Chen, president of the new student organization.

The group has a variety of activities planned for the upcoming year including RFID trainings and tours of various technology companies in the area. Chen said he hopes membership in the group can be increased to more than 50 by January. ATL is joining NDSU’s list of more than 250 organizations.

New Graduate Program Under Development

The UGPTI is working with the NDSU College of Graduate and Interdisciplinary Studies to develop a Transportation and Urban Systems degree program. The degree program, if approved, will include two new degrees, a master of transportation and urban systems degree and a master of science in transportation and urban systems as well as a certificate in transportation and urban systems. The first degree is targeted at mid-career professionals and other candidates who do not wish to conduct advanced research. The second is aimed at individuals with strong research interests and capabilities. The certificate will be targeted at practicing professionals. The new degrees will be interdisciplinary in nature and will be part of the existing Transportation and Logistics program coordinated by the Upper Great Plains Transportation Institute. In addition to the UGPTI, the departments of Architecture and Landscape Architecture; Civil Engineering; Geosciences; Sociology and Anthropology;

and Criminal Justice and Political Science will participate.

NDSU Program Renamed to Reflect Broad Focus

The Master of Managerial Logistics Program is a new name for the Master of Military Logistics Program at North Dakota State University that more accurately reflects the program’s breadth.

“The name change more accurately reflects the content of the courses in the program and will allow us to market the program to a broader audience and recruit students from a wide variety of disciplines,” notes Denver Tolliver, director of the program. Tolliver also serves as director of the MPC.

The program was developed three years ago to educate military and department of defense professionals in principles and applications business transportation and logistics and supply-chain management. It was anticipated that they would apply those principles in military settings. “We do not want to imply that we are focusing entirely on logistics within the military,” Tolliver says.

Students in the intensive, one-year program leave with a strong grasp of the business side of transportation and supply chain management. “This education will benefit them after they leave the military,” Tolliver says. “The new name will help them market themselves in the civilian job market.

Non-military students are more likely to enroll in the program if the name reflects its focus on supply chain practices in the private sector. “Broadening enrollment is critical to the sustainability and growth of the program. The simple change to ‘managerial’ logistics greatly increases our chances of growing the program and offering a broader perspective for class discussions,” he says.

“The name change does not reflect disconnect between the original program and the current program,” Tolliver notes. “The courses and

content have not changed and the name change is consistent with the history and our growth expectations for the program. Retaining the MML acronym will allow us to capitalize on our existing name recognition. This step simply reflects the growth and progress of this program.”

NDSU Students Earn Best Paper Award at International Conference

NDSU doctoral students Chris I. 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 Orlando, FL, Sept. 17-19.



Chris Enyinda

Briggs and Enyinda presented the paper, “The Role of Competitive Intelligence Leverage in Supply Chain Risk Management Strategy.” The paper proposes a competitive intelligence approach to managing supply chain risks. The paper has been

published in the Global Academy of Business and Economic Research Proceedings. It also is being considered for publication in the Journal of Global Business and Research.

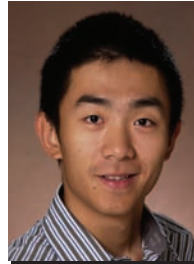
Briggs is studying transportation and logistics. He is from Nigeria and is on sabbatical from the faculty at Alabama A&M University in Normal, AL. Upon completion of his doctorate, he plans to return to Alabama A&M to continue a teaching, research and publication career. Enyinda is a professor and coordinator of the Logistics/Supply Chain Management Program at Alabama A&M University and is working on his second doctorate. He originally is from Huntsville, AL.



Charles Briggs

Academic advisers are Denver Tolliver, MPC director, and Koo, who also is director of the Center for Agricultural Policy and Trade Studies at NDSU.

Chen to Present at Winter Simulation Conference



Xianzhe Chen

NDSU PhD student Xianzhe “George” Chen will present a paper at the annual Winter Simulation Conference in Orlando in December. His presentation, “Supply Chain Risks Analysis by Using Jump-Diffusion Model,” is about modeling the supply chain demand disruption by using a jump-diffusion model and investigating the effects of demand risk on the performance of supply chain in continuous time setting by using simulated annealing simulation optimization method. The conference is the premier international forum for disseminating recent advances in the field of system simulation. Chen was selected as the chair of the “Monte Carlo Risk Analysis in Finance, Operations, and Optimization” track, which includes presentations from Northwestern University, the University of Maryland and NDSU.

Undergraduates Placed in Summer Internships

Seven Colorado State University (CSU) undergraduate students in Civil and Environmental Engineering were placed in summer 2008 internships via the North Front Range Transportation Research Internship Program (NFR-TRIP). The NFR-TRIP is a collaborative program of CSU (via the Mountain Plains Consortium) and the North Front Range Metropolitan Planning Organization. Interns placed were: Raymond Nickle with DMJM HARRIS and Todd Rullo with Stantec Consulting Inc., both in Denver; Matt Figgs and Kelly Larson with Weld County - Engineering; Robert Redd with City of Loveland – Engineering; William Mihelich with City of Loveland – Stormwater; and Mark Fisher with City of Berthoud – Public Works Department.

French Students in Residence at CSU

Three undergraduate students from France - Jonathan Finot, Antoine Morer and Jean-Baptiste Poljak - were in residence at Colorado State University in summer 2008. They completed practical training requirements for their degree from their home institution, Ecole National Supérieure Des Technologies et Industries at the Université Henri Poincaré – Nancy 1. The students were involved in various research projects funded by the MPC and the National Science Foundation.

University of Utah Students Receive Grant

The University of Utah ITE Student Chapter (composed of Utah Traffic Lab research assistants) was recently awarded a \$1,000 grant. The grant was given to the students from the national ITE offices for doing a parking and trip generation data collection project. The students collected data from senior adult and assisted living centers, and then completed a detailed report summarizing the data.



French students look at a cannon for a hurricane impact test.

NEW STUDENTS

Colorado State University

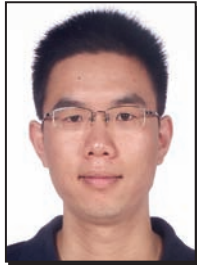


Jun Wu

Jun Wu finished her master's and bachelor's degrees at Chang'an University in China and is currently pursuing her PhD degree in the structure group at CSU. Wu's research interest is focused on bridges and her research study focuses on lifetime analysis and

damage detection of long-span bridges. She has been involved in several research projects including MPC research projects. Since Wu joined Dr. Suren Chen's group in the department of Civil and Environmental Engineering in January 2007, her research results have been reported in several journal and conference papers.

Feng Chen received his master's degree and bachelor's degree from China Academy of Building Research and Peking University, respectively. Chen worked on wind effects on buildings between 2004 and 2007 and he has just started his second year PhD study with Dr. Suren Chen at CSU. His PhD research focuses primarily on transportation safety under adverse environmental conditions. He has been working on several research projects from different sponsors including one from MPC. He has published and presented his research findings in several conferences.



Feng Chen



Carolyn Namagga

Carolyn Namagga holds a B.S. degree in civil engineering and is currently pursuing an M.S. degree in structural engineering at Colorado State University. She previously was employed for two years at an engineering consulting firm as a design engineer.

She has undertaken various projects which involved structural design and supervision, soil investigations, and preparation of civil/structural drawings. Currently, she is working as a research assistant at the Department of Civil and Environmental Engineering, investigating the optimal usefulness of fly ash in structural concrete.

North Dakota State University

PhD Students

Monsur Ahmed has been working as a graduate research assistant at the Upper Great Plains Transportation Institute since fall 2008. He received his B.S. and M.S. degrees in economics and master of science degree in economics as well, in the United States.



Monsur Ahmed

Currently, he is working on his PhD degree in transportation and logistics at the North Dakota State University. In his research, Monsur focuses on economic and financial implications from the point of view of a transportation analyst in the field of transportation and logistics.

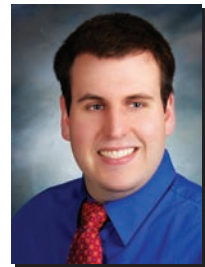


Eileen Campbell

Eileen Campbell received her undergraduate degree in marketing with a concentration in E-commerce and an MBA from the Florida Gulf Coast University. Campbell began her studies at NDSU in 2008. Upon completion of her degree, Campbell hopes

to continue her career at a research university where she will also teach. She is interested in the implications of port capacity on corporations with global operations particularly with regard to the outsourcing of manufacturing and the ports' ability to facilitate the large volume of imports to the United States. Campbell is also interested in how technology can increase opportunities for companies to embrace the green supply chain and become environmentally responsible.

Christopher DeHaan, of Fargo, ND, is finishing his MBA at NDSU. He will continue at NDSU with the PhD in transportation and logistics program. DeHaan received his B.S. in manufacturing engineering from North Dakota State University in 2006. He is currently working full time as a manufacturing engineer in a local small business. He is interested in supply chain management and transportation security issues.



Christopher DeHaan

Steven Leon, originally from Odenton, MD, graduated Magna Cum Laude from the University of North Dakota in 1990 with a degree in aeronautical sciences. He continued his education at Loyola College in Maryland where he received his MBA in International Business in 2006. Leon's research interests include aviation infrastructure investment, privatization of airlines and airports, as well as transportation policy. He plans to work with an international association or organization to establish aviation transportation systems that promote economic growth for developing countries. Leon would like to teach in the fields of supply chain management and operations management.



Steven Leon

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Jeremy Mattson

Jeremy Mattson began working with UGPTI's Small Urban & Rural Transit Center in 2007. He has conducted research on alternative fuels, energy prices, and transit ridership. He holds a B.A. degree in economics and business management and an M.S. degree in agricultural economics.

South Dakota State University

Jason Stripling, a native of Minneota, MN, is a senior undergraduate student at South Dakota State University. He came to SDSU in the fall of 2004 and will earn a B.S. degree in civil and environmental engineering in December 2008. Jason will join the graduate school at SDSU in January 2009 and is expected to complete his M.S. degree in civil engineering in May 2010. His research work will involve development and evaluation of concrete mix designs for improved concrete pavement performance. The research will be part of an MPC/SDDOT co-funded study to develop optimized design and construction methods of concrete pavement in South Dakota. Following graduation from the graduate school, Jason plans to work as a structural engineer.



Ryan Larsen

Ryan Larsen is a graduate student in the civil and environmental engineering program at SDSU. He is a native of Elk Point, SD. Ryan entered the civil engineering program at SDSU in December 2004 and earned his B.S. degree in civil and environmental engineering in May 2008. He worked as an undergraduate research assistant with faculty members Francis Ting and Allen Jones on a study of scour simulation using the SRICOS method since the study started in January 2007. The study was co-funded by MPC. Ryan is now a graduate student at SDSU working on a co-funded project by MPC that is an extension of the work he performed as an undergraduate researcher. Ryan published a paper entitled "Erosion Function Apparatus" in Volume 6, 2008, of the Journal of Undergraduate Research by South Dakota State University. Jones and Ting were faculty sponsors.

University of Utah

Bhagavan Nadimpalli of India is working on his M.S. in civil engineering. His present work is on express lanes genetic algorithm microsimulation modeling seismic vulnerability and emergency response analyses of UDOT Lifelines. The project is co-sponsored by the Utah Department of Transportation. Bhagavan's career interests are transportation planning, traffic management, and intelligent transportation systems.

Milan Zlatkovic is from Pirot, Serbia. In 2005 Milan earned his bachelor's degree at the Faculty of Transport and Traffic Engineering, University of Belgrade, Serbia, in the Department of Road and Urban Transport and Traffic Engineering. He worked for the Department of Traffic in the City of Nish, Serbia, on problems of traffic signalization and traffic systems design. Milan was transferred to the Department for Public Transport, where he was in charge of planning public transportation routes, bus stops locations and time scheduling and also as a coordinator among public transport operators in the city. In January 2008, he joined the University of Utah, for his M.S. studies in the Department of Civil and Environmental Engineering, with major in transportation. He is a research assistant at the Utah Traffic Lab, where he is involved with several projects, which mostly regard public transportation.

Piyali Chaudhuri is a PhD student working in the Utah Traffic Lab under Dr. Peter Martin. She received her B.S. in civil engineering from Jadavpur University in Kolkata, India. Chaudhuri worked for a consultancy company in India for about three and a half years and earned her master's in civil engineering from the University of Windsor, Canada, in 2007. Presently, her research focuses on finding the optimal spacing of traffic monitoring stations on freeways. The project is co-sponsored by the Utah Department of Transportation.

Jeremy Gilbert is an undergraduate student at the University of Utah. He is expecting to earn a B.S. in civil engineering in the spring of 2009 and earn a M.S. in civil engineering in the spring

of 2010 through the Fastrax program. He is currently the president of the University of Utah ITE Student Chapter. He is a research assistant and the Utah Traffic Lab and has assisted with many projects including "High Occupancy-Toll Lane Experiment on I-15 in Salt Lake City Metropolitan Region: Traffic Flow Evaluation" and training of TOC operators at UDOT.

James Ries has been working in the traffic lab since May 2007. James is currently a senior in the civil and environmental engineering department at the University of Utah and expects to graduate with a master of engineering in spring 2010. He is working on two projects through the Utah Traffic Lab, ELGAME 2 the modeling of I-15, and a large data collection project for the MPO. James hopes to start his own AE firm in Salt Lake City.

Jagdish Thokala is pursuing a master's degree in computational engineering and science. His specialization involves modeling and simulation of systems. He had worked previously at Energy and GeoScience Institute(EGI) and the Utah Center for Advanced Imaging Research(UCAIR) at the University of Utah. He is now working as a programmer and his current research includes developing python scripts for inter-vehicle communication in VISSIM.

NEW MPC FACULTY

Richard Reid has extensive experience in design and construction of rigid pavement. He is joining efforts with co-investigators Hesham Mahgoub (associate professor) and Nadim Wehbe (professor), both of SDSU, to develop optimized design and construction methods of concrete pavement for South Dakota highways. The study, which will extend over a period of three years, is co-sponsored by South Dakota Department of Transportation and SDSU.

Reid is the assistant dean of engineering and professor of civil and environmental engineering at SDSU. He has a B.S. in civil engineering from the Citadel, and his M.S. and PhD degrees

in civil engineering were earned at The Georgia Institute of Technology. He spent 13 years serving as an engineering officer in the US Air Force where he developed experience as an environmental, pavement and research engineer. His previous research includes investigating the effects of explosions on reinforced soil systems, performance of integral bridge abutments, pavement maintenance and soil testing. Since coming to SDSU in 1995, Reid has served as a civil engineering faculty member, interim department head and assistant dean. He has been named College of Engineering Teacher of the Year three times and was also recognized as Brookings Area Educator of the Year. He is a licensed professional engineer and also serves in the South Dakota Air National Guard.

Jarrett Brachman, a recent addition to the staff of the Upper Great Plains Transportation Institute at NDSU, previously worked for the Central Intelligence Agency and West Point and has one published book on terrorist strategies.



Jarret Brachman

Originally from Fargo, Brachman relocated to the area to be closer to family in early August. He received his undergraduate degree in government and international affairs from Augustana College in 2000 and went on to receive his master's and PhD from the University of Delaware in political science and international relations. It was during his time at the University of Delaware that the attacks on the Twin Towers occurred. The attacks sparked Brachman's interest in why the event happened and what he could do to keep it from happening again.

His research began with a fellowship at the CIA while working on his PhD and later as the director of research for the Combating Terrorism Center (CTC) at West Point.

While at the CTC, Jarret focused on Jihadist ideology, strategy and propaganda. He has spoken on these topics before the British House of Lords and the U.S. Congress. His research has been

featured internationally on a variety of television and print media including 60 minutes, al-Jazeera and the New York Times. Brachman's book, "Global Jihadism," explores "the core doctrine and strategy of today's global Jihadist movement" and can be purchased on Amazon.com.

Recently, Brachman represented UGPTI at the Office of the Director of National Intelligence (DNI) conference Sept. 11 and 12 in Washington, DC. At the conference, Brachman spoke on a panel about how to study and combat terrorist threats. He hopes to establish a center for transportation and homeland security and will be teaching a variety of courses in the transportation and security fields for the masters of managerial logisitcs program.

Xuesong Zhou is an assistant professor in the Department of Civil and Environmental Engineering at the University of Utah from January 2007. He received his PhD degree in civil engineering from the University of Maryland in 2004. Prior to joining the University of Utah, Zhou worked as a traffic data architect and senior software engineer at Dash Navigation Inc., designing and developing real-time traffic estimation and prediction algorithms for the first commercialized internet-connected GPS navigation system in the United States. Zhou's research interests include modeling and simulation of dynamic traffic systems, estimation and prediction of network traffic conditions using advanced sensor technologies. For the past seven years, he has been assisting the FHWA to develop and provide technical support for a large-scale simulation-based dynamic traffic assignment system, namely DYNASMART-P, which is one of FHWA's 24 priority, market-ready technologies and innovations.

Harald M. Hjelle is serving as a visiting faculty member at the University of Utah. During his sabbatical at the Utah Traffic Lab this fall, he will be working on a comparative study of the environmental performance of freight transport alternatives as well as the economic efficiency of intelligent transport systems.

Hjelle is a transport economist affiliated to Molde University College in Norway. He has his major in economics from the University of Oslo and a PhD from the Norwegian University of Technology and Science (NTNU) in Trondheim. Before his career at Molde UC, he was a researcher at the Institute of Transport Economics in Oslo. His main research areas are methodology for appraisal of major transport infrastructure projects, optimal pricing of transport services, and the environmental performance of transport modes. He has been commissioned by the Norwegian Public Roads Administration, The Norwegian Civil Aviation Authority and the Norwegian Ministry of Transport and Communications in a project related to the development of appraisal methodology for infrastructure projects within the public road sector and aviation and pricing issues related to road use and the use of marine fairways and ports.



Rebecca Atadero

Rebecca Atadero joined the CSU faculty as an assistant professor in July 2008. For the past two years, as a research scientist/instructor at CSU, she has taught structural analysis and steel design to undergraduate students. Rebecca earned her bachelor's degree in civil engineering from Colorado State University in 2002. She went on to the University of California, San Diego, to earn a M.S. and PhD in structural engineering. She and her husband, Todd, are both excited to continue living in Fort Collins.

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Mountain-Plains Consortium
NDSU Dept. 2880
P.O. Box 6050
Fargo, ND 58108-6050

701•231•7938 (T)
701•231•1945 (F)
www.mountain-plains.org

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