The NEXTRANS Center is a Regional University Transportation Center funded by the U.S. Department of Transportation’s Research and Innovative Technology Administration (RITA) to implement a multidisciplinary program of transportation research, education, and technology transfer. The Center’s theme is to develop integrated and innovative solutions to transportation challenges by explicitly studying the interactions between vehicle, traveler, and infrastructure.

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Written and Designed by Jessica Mehr

NEXTRANS HOSTS CONFERENCE ON U.S. - CANADA BORDER CHALLENGES

On November 16, 2009, the NEXTRANS Center, with the assistance of the Government of Canada/avec l’appui du gouvernement du Canada and Access Technology Across Indiana, hosted a conference at Purdue University titled, “In Step, In Line, On Time: Regional Strategies for Trade, Security, and Mobility Challenges at the U.S. – Canada Border.”

This conference provided a unique opportunity for guests from the U.S. and Canadian diplomatic missions, Transport Canada, and U.S. Department of Transportation to engage in dialogue with private-sector stakeholders and researchers. Focusing in the Great Lakes Region, the event helped NEXTRANS meet its charge as a Regional University Transportation Center by addressing the area’s need for an efficient intermodal freight transportation system. It also supported the Center’s mission of developing integrated solutions and fostering innovative partnerships.

Throughout the day-long event, speakers stressed the importance of the U.S. – Canada border, which supports the largest two-way trading relationship in the world. Each nation serves as the other’s top export market (80% of Canadian exports, 22% of U.S. exports), and approximately 7.1 million U.S. jobs directly or indirectly depend on U.S. – Canadian trade. Due to their shared economic, energy, and security interests, it is imperative that both countries collaborate to find an optimal balance between trade, security, and mobility at the border.

To this end, the NEXTRANS conference began with opening remarks from Srinivas Peeta (Director, NEXTRANS); David Franklin (U.S.-Canadian Border Coordinator, Federal Highway Administration); Daniel McGregor (Senior Policy Advisor, Transport Canada); and Jeffrey Bolin (Associate Vice President for Research, Purdue University).

These remarks were followed by the “Trade and Security” session, which aimed to address major challenges and opportunities to achieve a balance between trade goals and security.

(Continued on Page 9)
In the months since our last newsletter, the NEXTRANS Center has organized a number of exciting events. On November 16, 2009, we led an international conference at Purdue University titled, “In Step, In Line, On Time: Regional Strategies for Trade, Security, and Mobility Challenges at the U.S. – Canada Border.” This event brought together stakeholders from all sectors, highlighting the importance of a seamless and secure border with regards to bi-lateral trade between the two countries (see cover, pages 9-12).

On November 17th, we had the opportunity to host a panel of USDOT officials led by the Research and Innovative Technology Administration (RITA) for a NEXTRANS Center site visit. This day-long event allowed us to showcase Center accomplishments since our inception in 2007, as well as the students, faculty, staff, and partners who made these successes possible (page 3).

In other news, the NEXTRANS Advisory Council recently met at Purdue University; our students and faculty have presented research at conferences such as INFORMS and the Transportation Research Board’s Annual Meeting; Student of the Year Brandon Strohl was honored at the Council of University Transportation Centers (CUTC) Annual Banquet in Washington, D.C.; and the Center has welcomed a new full-time Research Associate, Dr. Sushant Sharma. We are also currently accepting applications for the 2010 Undergraduate Summer Internship in Transportation (www.nextrans.org/internship).

Finally, I would like to thank Dr. Mahmud Farooque, who served for two years as the Center’s first Managing Director. Mahmud recently joined Arizona State University as the Associate Director of the Consortium for Science, Policy, and Outcomes in Washington, D.C. Mahmud has been a vital part of our Center’s success and smooth day-to-day operations, and we wish him great success in his new position.

I hope you enjoy this special extended issue of the NEXTRANSporter. Please visit www.purdue.edu/dp/nextrans to learn more about our research and activities.

**DR. CHU VISITS NEXTRANS**

NEXTRANS recently hosted Professor Chih-Peng Chu from the Department of Business Management at National Dong Hwa University in Taiwan. Dr. Chu visited NEXTRANS in January 2010, as part of the Center’s ongoing efforts to foster institutional linkages at the global level.

Dr. Chu’s week-long visit allowed him to share ideas with faculty and staff, and discuss opportunities for future joint-research initiatives. NEXTRANS has undertaken a Memorandum of Understanding with National Dong Hwa University aimed at collaborating on projects related to logistics management and land cargo flow.
On November 17, 2009, the Research and Innovative Technology Administration (RITA), the administrator of USDOT’s University Transportation Centers (UTC) program, conducted its first official site visit of the NEXTRANS Center, USDOT Region V Regional University Transportation Center located at Purdue University.

Amy Stearns, RITA’s University Programs Specialist administering the NEXTRANS Center grant, led the site visit team, which included Robin Kline from RITA and Keith Gates from the Federal Transit Administration. The agenda for the day included programs and activities conducted under the auspices of the UTC grant.

The site visit offered a valuable opportunity for NEXTRANS to showcase its key accomplishments since its inception in 2007, as well as provide an overview of its integrated management approach; innovative partnerships with universities, state DOTs and private sector companies; grant administration and compliance practices; institutional support and fiduciary oversight; and research, education, and technology transfer activities.

Highlights of the day included:

- Presentations by NEXTRANS Director Srinivas Peeta (Purdue University), and Co-Directors Ray Benekohal (University of Illinois at Urbana-Champaign) and Rabi Mishalani (The Ohio State University) detailing the Center’s integrated approach; innovative partnerships; and accomplishments in research, education, and technology transfer.
- Poster presentations by graduate and undergraduate students illustrating their work on NEXTRANS-funded research projects (page 6).
- A Luncheon program featuring student awards, readings by High School Essay Competition winners, and remarks by NEXTRANS Advisory Council Chair Joe Gustin (Deputy Commissioner, Planning and Operations, Indiana Department of Transportation).
- Presentations by students and teachers from Crawfordsville High School discussing their participation in NEXTRANS-sponsored programs and events (page 8).
- Research Project presentations by NEXTRANS-funded faculty from Purdue, University of Illinois at Urbana-Champaign and The Ohio State University (page 4).
- Meetings with Purdue Senior Associate Vice President for Research and Discovery Park Executive Director Al Rebar, and representatives from the business office and Sponsored Program Services.
Members of the NEXTRANS Advisory Council held their second annual meeting at Purdue University on November 17, 2009. In the morning, AC members were invited to join visiting US-DOT officials for a series of presentations by NEXTRANS Center partners. Afterwards, they participated in a tour of Purdue’s Discovery Park facilities, enjoyed one-on-one poster presentations by NEXTRANS-funded students, and learned about current transportation-related activities being conducted by classes at Crawfordsville High School (Crawfordsville, Indiana). AC members then joined students, faculty, staff, and guests for lunch and student awards.

In the afternoon, members convened for their second annual meeting, which was led by AC Chair Joe Gustin (Deputy Commissioner, Planning and Operations, Indiana Department of Transportation). They were joined by NEXTRANS Director Srinivas Peeta (Purdue), Co-Director Ray Benekohal (University of Illinois at Urbana-Champaign), and Co-Director Rabi Mishalani (The Ohio State University). General topics discussed included heightening Center visibility and communication, and exploring new opportunities for collaboration.

**Faculty Discuss Value of NEXTRANS Research**

During the Research and Innovative Technology Administration’s recent visit to the NEXTRANS Center, faculty members from major partner universities delivered presentations on several Center-funded projects:

- **Ben Coifman** (The Ohio State University) discussed a project titled “Innovative Vehicle Classification Strategies: Doing More for Less.” State DOTs typically employ expensive vehicle classification systems to monitor roadway usage. The simplest stations use in-pavement dual-loop detectors to measure vehicle speed and length. This project has extended classification coverage to single loop detectors, which will allow agencies to leverage existing infrastructure to obtain more data at minimal cost. Researchers are also investigating innovative alternatives to vehicle classification, such as LIDAR (Light Detection and Ranging).

- **Dan DeLaurentis** (Purdue University) presented research titled, “System Methods for Uncovering Economic, Technological, and Policy Enablers to Multimodal Transportation With On-Demand Air Service.” This project explores the idea of a commercial on-demand air service (ODAS) utilizing very light jets. Researchers are analyzing what multimodal resources, transportation policies, and economic variables are likely to enhance “doorstep-to-destination” mobility for citizens and businesses. If ODAS can deliver improved speed and flexibility, it could generate significant economic benefits in the Midwest with moderate investment.

- **Yanfeng Ouyang** (University of Illinois at Urbana-Champaign) discussed a project titled “Reliable Sensor Location Design for Multimodal Freight Transportation Systems.” This project developed an analytical framework to quantify the benefits of deploying traffic sensors in multimodal freight transportation systems. It also developed reliable models for selecting optimal sensor locations. This will maximize the benefits of traffic surveillance, which can help reduce congestion and maintain efficient and sustainable network operations.
INVESTIGATING OPPORTUNITIES FOR IMPROVING SUSTAINABILITY

Impact of Public Transit Market Share on Energy Consumption and the Environment: Developing Statistical Models for Validation and Gross Predictions

Investigated by Rabi Mishalani and Prem Goel (The Ohio State University)

Urban passenger transportation systems encompass many possible modes. These include private vehicles, urban street bus transit, bus rapid transit, light rail, heavy rail, and even human propulsion modes such as walking or biking.

The urban form and corresponding traffic flow patterns affect both the modes offered and the choices travelers make. These transport mode choices are made at the individual level, while transport and land-use policies are made at the government level. In light of the major consequences that transportation has on energy needs and the environment, policy makers have been focusing more attention on developing strategies to minimize these negative impacts, including attempts to increase the use of public transportation.

Clearly, policies have the potential to influence choices, and, at the same time, the actual choices made under new policies directly influence the success or failure of such policies. Therefore, in order to develop more informed urban passenger transport and land-use policies, and evaluate the effectiveness of these new policies in achieving long-term energy and environmental sustainability, it is important to understand:

- How urban form and origin-destination traffic flow patterns affect passenger transport modes, including quality of service, capacity, and market share (i.e., the percentage of travelers using each mode).
- How market share and capacity distributions across passenger transport modes impact energy consumption and the environment.

There are numerous transportation and land-use model systems based on comprehensive behavioral theories that are used for evaluating the effectiveness of new policies. While the specific parameters of these “mechanistic” model systems can be validated using field data, the validation of the accuracy of these models in capturing the aggregate effectiveness of new policies remains a challenge.

This research will help urban areas enact policies that increase the positive impacts of mass transit on energy consumption and the environment.

This study aims to develop a set of empirically-derived relationships for assessing and validating the accuracy of mechanistic models in capturing the aggregate effects of new policies, focusing on their ability to address questions relating to transit share and its effect on energy consumption and the environment (specifically greenhouse gas emissions).

A secondary objective of this study is to use the developed empirical relationships to provide gross predictions of the extent to which possible policies would reduce negative energy and environmental impacts. This would provide a means of identifying the types of results that could be achieved by certain types of policies before conducting a detailed and costly analysis. Thus, policy makers could test several options and then focus on the policies that hold the most promise.

By validating the accuracy of mechanistic models and providing a gross, yet cost-effective method for screening new policies, the results of this research could eventually help urban areas develop and enact policies that increase the positive impacts of mass transit on energy consumption and the environment.
STUDENTS SHOWCASE RESEARCH ACCOMPLISHMENTS

Undergraduate and graduate students working on NEXTRANS-funded projects were given the opportunity to showcase their research for USDOT officials during the Center’s recent site visit, held on November 17, 2009 at Purdue University.

In addition to outlining their project’s purpose, significance, and outcomes via poster presentations, students were able to discuss their work first-hand with Amy Stearns (Research and Innovative Technology Administration), Robin Kline (Research and Innovative Technology Administration), and Keith Gates (Federal Transit Administration), as well as members of the NEXTRANS Advisory Council.

A total of ten presentations were prepared by students from Purdue, the University of Illinois at Urbana-Champaign (UIUC), The Ohio State University (OSU), and Wayne State University (WSU).

- **Panagiotis Anastasopoulos** (Purdue): Public-Private Partnerships in Highway Reconstruction, Rehabilitation, and Operations
- **Kivanc Avrenli, Hani Ramezani** (UIUC): Traffic Flow Characteristics and Capacity in Intelligent Work Zones
- **Kyle Bemis, Aditya Joshi** (Purdue): Seeking Better Solutions in Multi-modal Transportation: A Study of ON-demand Air Service (ODAS)
- **Kakan Chandra Dey** (WSU): Investigation of Emergency Vehicle Crashes in the State of Michigan
- **Salvador Hernandez** (Purdue): Development of Carrier-Carrier Collaboration and Transfer Location Models for Less-Than-Truckload (LTL) Freight Logistics
- **Yuxiong Ji** (OSU): Assignment-based Methodology to Match Automated Vehicle Location Transit Bus Trip Trajectories to Schedules
- **Sofie Leon** (UIUC): Development of a Low-temperature Cracking Analysis and Design Tool: Visual LTC
- **Brandon Strohl** (OSU): Empirical Comparative Assessment of the IPF Procedure for Determining Bus Route Passenger OD Flows
- **Hao Wang** (UIUC): Pavement Damage Due to Different Tire and Loading Configurations on Secondary Roads
- **Yufang Zhang** (OSU): Incorporating Aerial Image-Based Information in AADT Estimation
BRANDON STROHL NAMED STUDENT OF THE YEAR

The NEXTRANS Center is pleased to announce its selection of Brandon Strohl as its 2009 Student of the Year. Brandon is a Masters candidate in the Civil and Environmental Engineering and City and Regional Planning programs at The Ohio State University.

Brandon’s interests are in the area of transportation systems analysis and planning. His research involves the advanced evaluation of estimation procedures that produce transit bus route origin-destination (OD) flows from boarding and alighting data. This data is obtained from OSU’s Campus Transit Lab using Automatic Passenger Count (APC) technologies.

Brandon was awarded the highly competitive Graduate School University Fellowship for his first year of graduate study at OSU. He has worked for the Ohio Department of Transportation (ODOT) and EMH&T Inc, and is an active member in the American Society of Civil Engineers (ASCE), Chi Epsilon, and the National Civil Engineering Honor Society.

Brandon was selected based on his strong academic standing, research contributions, leadership and management skills, broad professional experience, and his keen interest in advancing the field of transportation systems analysis and planning. He was formally honored on January 9, 2010 at the Council of University Transportation Centers (CUTC) Annual Banquet and Awards Ceremony in Washington, D.C. Congratulations Brandon!

JOSH MILLS

Josh Mills is a Ph.D. candidate in the Department of Civil Engineering at Purdue University. He holds a Bachelor of Science in Civil Engineering from Case Western Reserve University (2006) and a Master of Science in Civil Engineering from Purdue (2007).

Josh is currently working with Professor Jon Fricker on NEXTRANS-funded research exploring the transportation and socio-economic impacts of bypasses on communities. His primary role in the project is to collect and process economic data, investigate possible statistical methods that could be used for analysis, and build and test statistical models. These models will be used to identify how communities and surrounding areas are affected by bypasses and how these impacts change over time. Preliminary findings of his research have been presented at multiple conferences, including the Transportation Research Board 89th Annual Meeting and the 56th Annual North American Meetings of the Regional Science Association International.

In addition to his research duties, Josh is a member of Tau Beta Pi (The Engineering Honor Society), and is actively involved in the Purdue Chapter of the Institute of Transportation Engineers (ITE). In 2009, he received Purdue University’s Eldon J. Yoder Memorial Scholarship, which is awarded to an outstanding student in the area of transportation engineering.
2009 Indiana High School Essay Contest winners Chelsea DeLarm and Mikayla Janney were honored on November 17th during the NEXTRANS Center’s first site visit conducted by the Research and Innovative Technology Administration (RITA).

After reading excerpts from their essays, Chelsea and Mikayla were awarded certificates by Advisory Council Chair Joe Gustin. In addition, both students received checks for $250, and were recognized in the Center’s 2009 Annual Report.

Chelsea and Mikayla’s essays were chosen from more than 80 submissions by high school students across Indiana, which were judged blindly by a panel of transportation scholars, Purdue Discovery Park officials, and the NEXTRANS Center staff. The essay topic was, “Why is transportation important to the future of Indiana? What transportation challenges is Indiana facing, and how might we solve them?”

The goal of this competition was to encourage 9-12 grade students to consider how integral transportation is to our lives, and interest them in pursuing transportation-related careers and/or higher education in the field. To read excerpts from Chelsea and Mikayla’s winning essays, download our 2009 Annual Report (www.nextrans.org).

Since 2004, Helen Hudson’s English students at Crawfordsville High School have made it their mission to improve their local Amtrak station. Through the help of a problem-based learning (PBL) grant, CHS students have removed massive amounts of trash, painted the shelter, created a garden, installed a welcome sign and logo, and had the road leading to the station repaired. Five years later, the students continue to clean the station each week, host events such as “C-Ville Rides the Train,” and even started a band called the Boxcar Adolescents, which uses instruments made from scrap metal found along the tracks.

Their hard work caught the attention of NEXTRANS Director Srinivas Peeta, who invited the PBL classes to become secondary school partners. In May 2008, their display booth and presentations at the NEXTRANS Inaugural Summit drew keen interest, and student Chelsea DeLarm received a special award from RITA Administrator Paul Brubaker. One of Hudson’s students, Jim Caraher, was selected to become the NEXTRANS Center’s first high school intern, and Crawfordsville High School had strong participation in the Center’s first Indiana High School Essay Contest, garnering one winner (Chelsea DeLarm), and several honorable mentions.

Most recently, Helen Hudson and her classes were invited to participate in the NEXTRANS Center’s site visit on November 17th. The students seized this opportunity to showcase their accomplishments for USDOT officials, faculty from NEXTRANS partner universities, Advisory Council Members, and other Center guests. Through speeches, photos, and video, the students displayed their passion and unwavering commitment to promoting passenger rail travel in Indiana and beyond.
needs from the perspectives of the U.S. and Canadian Governments. These perspectives were provided by Robert Noble (Canadian Consul General, Detroit); Kevin Johnson (U.S. Consul General, Toronto); Paul Haddow (Director General of Strategic Policy and Governance, Canada Border Services Agency); and Christopher Perry (Director of Detroit Field Operations, U.S. Customs and Border Protection).

The general consensus of this session was that trade and security are not opposed to one another. While significant improvements have been made on both sides of the border, increased collaboration and investment is necessary to upgrade infrastructure and modernize facilities. A number of advanced technologies and joint initiatives such as FAST (Free and Secure Trade) were also cited as means to enhance border security while subjecting legitimate traders to fewer delays. Funding, however, presents an additional challenge, since both nations are experiencing an economic downturn and facing elevated federal deficits.

Robert Noble stressed the current need for pragmatism in the name of economic efficiency, and that governments need to promote, not restrict, trade. Kevin Johnson (U.S. Consul General, Toronto) reminded attendees that trade and security are not a “zero sum game.” Paul Haddow emphasized that meeting U.S. security needs would make trade facilitation more feasible, and Christopher Perry noted that individuals regarded by the U.S. as threats to national security have been successfully intercepted at the border.

This session was followed by a networking break featuring exhibitor booths. Presenters included the Michigan Department of
NEXTRANS HOSTS CONFERENCE (Continued)

Transportation, Transport Canada, The Ohio State University, NEXTRANS, Purdue Center for Visual Analytics for Command, Control and Interoperability Environments (VACCINE), and Access Technology Across Indiana (ATAIN).

During the “Gateways and Corridors” session, participants discussed regional strategies for developing major gateways and corridors with collaborations between transportation stakeholders. Hugh Conroy (Project Manager, Whatcom Council of Governments) stressed the need for more bi-lateral initiatives at the national and state/provincial level. Monica Blaney (Senior Policy Advisor, Freight Integration and Motor Carrier Policy, Transport Canada) pointed to the need for deeper integration with the U.S. across elements such as infrastructure, regulation, governance, processes, labor, etc. She described Canada’s three gateway and trade corridor strategies, which reflect a move toward system and merit-based funding and partnerships between governments and business.

Robert Tally (Division Administrator, FHWA – Indiana) delivered a presentation on the I-69 Corridor project, demonstrating the worth of a 1600-mile national highway connecting Canada to Mexico. Mohammed Alghurabi (Senior Project Manager, Michigan Department of Transportation) and others stressed the economic and security importance of the Detroit River International Crossing Project. The session was moderated by Professor Kumares Sinha (Director, Joint Transportation Research Program, Purdue University).

Gregory Nadeau (Deputy Administrator, Federal Highway Administration) delivered the keynote address during the Luncheon program. Nadeau’s speech touched upon a number of topics, including

What we need during the current downturn is more pragmatism in the name of economic efficiency... We need to reinvest in the northern border, to make it a true gateway to our prosperity — not a cumbersome checkpoint that stifles our competitiveness... No two countries co-operate so closely as we do in trade, energy supplies, intelligence-sharing, continental security, and combat and reconstruction in Afghanistan. This conference is yet another example of our willingness to work together on complex issues.
the Highway Trust Fund, American Recovery and Reinvestment Act, and current FHWA-funded projects. He discussed how border needs have changed over the years in response to terrorist attacks and economic globalization, and emphasized that Canada and the U.S. must continue to collaborate on innovative border initiatives. Nadeau’s remarks were followed by a lively question and answer session, during which he responded to impromptu audience questions. Srinivas Peeta; Robert Tally; and Joseph Gustin (Deputy Commissioner, Planning and Operations, Indiana Department of Transportation) also spoke during the Luncheon program.

Lunch was followed by a session titled “Industry Wants and Agency Needs,” which aimed to address border challenges from the perspectives of manufacturers. Birgit Matthiesen (Special Advisor to the President, Canadian Manufacturers & Exporters) directed attention away from frontline border agencies toward a wide range of other government departments, which she believes have done as much to “thicken the border” through fees, inspections and reporting requirements away from the border as agencies have at the border itself.

Stephen Russell (Member, Executive Committee, American Trucking Association) suggested trade efficiency and security can be improved by jointly managing risk; increasing security awareness for exporters, importers, and carriers; and improving cooperation and communication between carriers and government agencies. David Bradley (CEO, Canadian Trucking Alliance) echoed the need for better risk assessment, and suggested other solutions such as eliminating redundancy, reciprocal recognition of each other’s programs, halting fee increases, and harmonizing weights and measures.
in this session, which was moderated by William Anderson (Professor, Department of Political Science, University of Windsor).

The general consensus was that academia can provide valuable cost-benefit analysis and performance evaluation, which could help agencies make more informed decisions and garner support from stakeholders. There are, however, a number of challenges, such as poor data accessibility, lack of funding, and limited interface between academia and government on border issues.

The conference closed with a “Wrap-up” session, which was moderated by Ray Benekohal (Co-Director, NEXTRANS, University of Illinois at Urbana-Champaign), and featured David Davidson as Rapporteur (Program Director, Border Policy Research Institute, Western Washington University). They joined David Franklin, Daniel McGregor, Sarah Hubbard, and William Anderson to summarize some of the conference’s key points:

• Trade and security are not inherently opposed. “Getting security right” should help promote trade and mobility across the border.

• Possible solutions to border challenges include better risk assessment, pruning redundancies, harmonizing standards, developing better bi-national policy linkages, and fostering stronger state/province involvement.

• Infrastructure funding will continue to present a challenge. High federal deficits mean that future decisions may have to be made in the context of fiscal restraint.

• Trusted traveler and shipper programs such as NEXUS and FAST may represent one of the most important tools for reducing delays and uncertainty at the border; however, improving participation in these programs may require infrastructure investment (extending dedicated FAST lanes) or government subsidies.

• The decrease in trade as a result of the recession may be masking previous border issues that will recur as the economy and Canada-U.S. trade recover. One looming question is how cross-border automotive shipments will recover as the industry comes out of its current crisis.

• Academia should strive to provide “knowledge for action,” which can help policy makers make well-informed decisions. At the same time, researchers should exercise their freedom to be visionary, without worrying about the “bottom line.”

The NEXTRANS Center would like to thank everyone who helped to make this conference an engaging dialogue between stakeholders within and beyond the Great Lakes Region. The Center would especially like to thank the conference steering committee, which was Co-Chaired by David Franklin, Daniel McGregor, and Mahmud Farooque.
STUDENTS AND FACULTY “INFORM THE GLOBE”

A number of NEXTRANS graduate students and faculty affiliates from Purdue University and the University of Illinois at Urbana-Champaign (UIUC) presented research at the 2009 INFORMS Annual Meeting, held October 11-14, 2009 in San Diego. Each year, the INFORMS Annual Meeting hosts more than 1,000 sessions and just under 4,000 papers, covering a broad landscape of topics in operations research and management sciences. The 2009 theme was “INFORMing the Globe.”

Graduate researchers Salvador Hernandez (Purdue), Yu Ting Hsu (Purdue), Georgios Kalafatas (Purdue), Amit Kumar (Purdue), Xiaopeng Li (UIUC), and Onur Pekcan (UIUC) participated in the 2009 technical sessions. They were joined by NEXTRANS faculty affiliates Christopher Barkan (UIUC), J. Riley Edwards (UIUC), Ananth Iyer (Purdue), Yanfeng Ouyang (UIUC), Srinivas Peeta (Purdue), F. Sibel Salman (Koc University –Turkey), and Satish Ukkusuri (Purdue), as well as Research Associates Lili Du and Sushant Sharma.

These participants presented research on topics including (but not limited to) traffic surveillance, supply-chain management, dynamic traffic assignment, mass evacuation, and Less-Than-Truckload (LTL) carrier-carrier collaboration.

CENTER CO-HOSTS RECEPTION AT TRB ANNUAL MEETING

On January 10, 2010, the NEXTRANS Center co-hosted a successful reception at the Transportation Research Board’s 89th Annual Meeting in Washington, D.C. Sponsored by NEXTRANS, Purdue, and the Joint Transportation Research Program (JTRP), this year’s Purdue University Civil Engineering Reception enjoyed strong attendance, offering participants the opportunity to interact with transportation professionals, as well as NEXTRANS partners, faculty, and students.

The Center’s lively reception was just one of the many highlights from this year’s meeting. The Network Modeling Committee (ADB30), chaired by NEXTRANS Director Srinivas Peeta, successfully unveiled a web site to facilitate more efficient information exchange (www.nextrans.org/ADB30); Kumares Sinha (JTRP Director and former NEXTRANS Executive Committee Member) was awarded the 2009 Roy W. Crum Distinguished Service Award for his outstanding leadership in transportation research and education; and a number of NEXTRANS investigators presented research in their areas of expertise.

Each year, the TRB Annual Meeting attracts more than 10,000 transportation professionals from around the world. With more than 3,000 presentations in nearly 600 sessions, the program addresses topics of interest to policy makers, administrators, practitioners, researchers, and representatives of government, industry, and academic institutions. The 2010 spotlight theme was “Investing in Our Transportation Future – BOLD Ideas to Meet BIG Challenges.”
FACULTY PROFILE:
WILLIAM BUTTLAR

William Buttlar is a Professor and Narbey Khachaturian Faculty Scholar at the University of Illinois at Urbana Champaign. His research focuses on the experimental and analytical characterization of the physical properties of asphalt mixtures, particularly at low temperatures. He also conducts research in the areas of pavement simulation, airfield pavement design and rehabilitation, and sustainable infrastructure materials.

As a NEXTRANS researcher, Dr. Buttlar is currently developing a user-friendly, computationally efficient program that can be used to analyze and design against thermal cracking in asphalt pavements. This new tool will help prevent unnecessary infrastructure damage in cold regions around the world.

Dr. Buttlar’s work as a research team member of the Strategic Highway Research Program A005 led to the development of the SUPERPAVE indirect tensile test (IDT), now specified by AASHTO T322. His recent work has led to the development of the world’s first standardized fracture test for asphalt concrete, the disk-shaped compact tension test, specified by ASTM D 7313.

In 2001, the Canadian Technical Asphalt Association named Dr. Buttlar the recipient of the Prix Earl Kee Award for best technical presentation by new authors. In 2000, he was recognized by the National Academy of Sciences, Transportation Research Board as the recipient of the Fred Burggraf Award in recognition of a “paper of outstanding merit.” He was named the George Crawford Faculty Scholar by the Civil Engineering Department at the University of Illinois, 2001-2003. First among Dr. Buttlar’s several teaching honors is his appointment as a Collins Fellow in 2002 by the UIUC College of Engineering, Academy for Excellence in Engineering Education.

Dr. Buttlar is a member of numerous professional organizations, and serves on the editorial board of the International Journal of Road Materials and Pavement Design. He is Director of the Annual Transportation Highway and Engineering Conference. He holds a B.S. (Penn State University 1989), M.S. (Penn State University 1992), and Ph.D. (Penn State University 1996), all in civil engineering.

WELCOME, SUSHANT SHARMA

Dr. Sushant Sharma recently joined the NEXTRANS Center team as its second full-time Research Associate. His major roles are to conduct Center-associated research and outreach activities, identify and pursue new funding, and participate in the writing of research proposals and research reports.

Sushant holds a Ph.D. in Transportation Systems Engineering from Indian Institute of Technology (2009). His research interests include transportation network optimization, control and management, intelligent transportation systems and traffic planning, financial and economical analysis of projects, and sustainable transportation networks including environment modeling. He has publications in all of these domains including public transport design, and has presented research papers at numerous international conferences. Before joining NEXTRANS, he worked as a Transportation Planner in the Halcrow Consulting Pvt. Ltd. (UK), which specializes in the planning, design and management of infrastructure projects.

Sushant has already represented NEXTRANS at numerous events, including the Indiana Logistics Summit (2009), INFORMS Annual Meeting (2009), 89th Annual Transportation Research Board Meeting (2010), and the IntelliDriveSM Working Group Meeting (2009). His is currently working on several research proposals.

Welcome, Sushant!
Joe Gustin is currently Deputy Commissioner of Planning for the Indiana Department of Transportation (INDOT), where he and his staff of approximately 150 professionals develop INDOT’s intermediate and long-range transportation strategies. This includes developing the four-year State Transportation Improvement Plan, providing the platform and direction for transportation infrastructure asset management, administering grant funding and federal aid, and conducting research and development in collaboration with Purdue.

As Chair of the NEXTRANS Advisory Council, Mr. Gustin takes the lead in providing strategic and programmatic guidance for the Center, ensuring that activities and goals are synergistic with regional and national needs, and of value to the stakeholders. Since joining the AC in October 2009, Gustin has participated in a number of NEXTRANS-related activities. He spoke and presented student awards during the Center’s first RITA-led site visit; delivered remarks at the NEXTRANS Conference: “In Step, In Line, On Time: Regional Strategies for Trade, Security, and Mobility Challenges at the U.S. – Canada Border;” and chaired the Center’s second annual Advisory Council meeting.

Mr. Gustin holds a B.S. in Mechanical Engineering (Rose Polytechnic Institute), and an M.S. in Nuclear Engineering (Purdue University). He is a Registered Professional Engineer in the State of Indiana, serves on the Indiana Toll Road Oversight Board, and is Chairman of the JTRP Advisory Committee. Before joining INDOT in 2005, Mr. Gustin spent nearly 30 years in the electric utility business at IPALCO Enterprises, Inc. and its subsidiaries.

NEXTRANS thanks Joe Gustin for his time, support, and leadership.